

WU

N532^{ua}
1892^a

UNION MEETING

OF THE

PENNSYLVANIA AND NEW JERSEY
STATE DENTAL SOCIETIES,

AT THE

MOUNTAIN HOUSE,

CRESSON, PA.

July 21, 22,

1892.

PHILADELPHIA:

THE S. S. WHITE DENTAL MANUFACTURING COMPANY.

1892.





New Jersey, State Dental Society
" "

UNION MEETING



OF THE

PENNSYLVANIA AND NEW JERSEY

STATE DENTAL SOCIETIES,

AT THE

MOUNTAIN HOUSE,

CRESSON, PA.

July 21, 22,

1892.



PHILADELPHIA:

THE S. S. WHITE DENTAL MANUFACTURING COMPANY.

1892.

WU
N5324
1872
c. 1

NATIONAL LIBRARY OF MEDICINE
BETHESDA 14, MD.

File 7715-200-2

BUSINESS SESSION
OF THE
TWENTY-FOURTH ANNUAL MEETING
OF THE
Pennsylvania State Dental Society,
HELD AT CRESSON, PA.,
July 19, 1892.

EXTRACT FROM CONSTITUTION.

“ The Pennsylvania State Dental Society, although formally accepting and publishing the Reports of the various Standing Committees and Essays read before the Society, holds itself wholly irresponsible for opinions, theories, and criticisms therein contained, except when adopted or sanctioned by special Resolution.”

TRANSACTIONS

OF THE

Pennsylvania State Dental Society.

MOUNTAIN HOUSE, CRESSON, PA., JULY 19, 1892.

THE twenty-fourth annual meeting of the Pennsylvania State Dental Society was called to order on Tuesday morning, July 19, 1892, at 10 o'clock, by President Louis Jack, D.D.S.

The following members were present :

F. H. ABEL, Erie.	JESSE C. GREEN, West Chester.
A. B. ABELL, Philadelphia.	S. H. GUILFORD, Philadelphia.
C. S. BECK, Wilkes-Barre.	G. W. GREEN, New Castle.
ALONZO BOICE, Philadelphia.	J. C. M. HAMILTON, Tyrone.
J. F. BENKART, Allegheny.	W. H. HERTZ, Hazleton.
ALONZO P. BEALE, Philadelphia.	J. L. R. HEICHOLD, Clearfield.
A. P. BRUBAKER, “	W. S. HUBER, Lebanon.
F. L. BASSETT, “	LOUIS JACK, Philadelphia.
M. H. CRYER, “	L. FOSTER JACK, “
F. A. CONEV, Doylestown.	V. S. JONES, Bethlehem.
R. B. CUMMINS, Blairsville.	E. P. KREMER, Lebanon.
E. T. DARBY, Philadelphia.	E. C. KIRK, Philadelphia.
C. J. ESSIG, “	C. V. KRATZER, Reading.
J. L. EISENBREY, “	W. A. KESSLER, Pittsburg.
P. K. FILBERT, Pottsville.	J. B. KEIFER, Altoona.
ISAAC FOGG, Philadelphia.	W. F. LITCH, Philadelphia.
W. H. FUNDENBERG, Pittsburg.	J. A. LIBBEY, Pittsburg.
W. F. FUNDENBERG, “	J. T. LEET, Hollidaysburg.
L. ASHLEY FAUGHT, Philadelphia.	W. E. MAGILL, Erie.

W. B. MILLER, Altoona.	T. C. STELLWAGEN, Philadelphia.
D. N. MCQUILLEN, Philadelphia.	A. H. SIBLEY, “
J. G. R. MILLER, “	J. D. THOMAS, “
C. N. PEIRCE, “	J. P. THOMPSON, Johnstown
G. L. ROBB, Huntington.	W. E. VAN ORSDEL, Sharon.
H. E. ROBERTS, Philadelphia.	J. N. YOUNG, Wilkes-Barre.
C. R. SCHOLL, Reading.	

Reading of the minutes of the last annual meeting was, on motion, dispensed with.

The Board of Censors submitted the following report :

CRESSON, PA., July 19, 1892.

To the President, Officers, and Members of the Pennsylvania State Dental Society :

As your Board of Censors, we desire to report favorably upon credentials submitted to us as follows :

Faculty of the Philadelphia Dental College—Prof. J. Foster Flagg.

Harris Dental Association of Lancaster—W. H. Lowel, D.D.S.

Lebanon Valley Dental Association—Geo. H. Mayer, D.D.S.

Odontographic Society of Pennsylvania—Prof. C. N. Peirce.

W. F. FUNDENBERG,

W. A. KESSLER,

W. E. VAN ORSDEL,

Board of Censors.

The report was on motion received.

Subsequent reports of the Board of Censors were submitted and received, indorsing credentials of the following delegates :

Odontological Society of Pennsylvania—Dr. S. H. Guilford.

Susquehanna Dental Association—Dr. F. L. Hollister.

Philadelphia County Dental Society—Dr. W. L. Winner.

Faculty of Pennsylvania College of Dental Surgery—Dr. Geo. W. Warren.

Lebanon Valley Dental Society—Dr. J. H. Mease.

Odontographic Society of Pittsburg—Dr. H. C. King.

Odontological Society of Pennsylvania—Dr. L. Ashley Faught.

Odontographic Society of Pittsburg—Dr. C. B. Bratt.

Lebanon Valley Dental Society—Dr. R. Hollenback, Dr. W. Hoffman.

Odontographic Society of Pittsburg—Dr. J. A. Calhoun, Dr. A. G. Reinhart.

Applications for membership under the constitutional amendment of 1891 were received as follows :

Application of T. R. Morrison, D.D.S., Punxsutawney, Pa. Recommended by W. H. Fundenberg, M. H. Cryer.

Application of C. W. Brown, D.D.S., Lindsey, Pa. Recommended by S. H. Guilford, M. H. Cryer.

Application of W. L. Cave, D.D.S., Philadelphia, Pa. Recommended by D. N. McQuillen, S. H. Guilford.

Application of C. E. Rhone, D.D.S., Bellefonte, Pa. Recommended by W. E. Magill, C. N. Peirce.

All the foregoing being indorsed by the Board of Censors, the candidates were accordingly declared members after signing the constitution and paying the initiation fee.

President Jack reported that he was requested to make a representation to the Chairman of Census Matters of the impropriety and injustice of the classification of dentists in the census of 1890. In furtherance of this desire, the following petition and protest was forwarded to Eugene Hale by the officers of this Society :

PHILADELPHIA, PA., June, 1892.

HON. EUGENE HALE, Senator of the United States, Chairman of Committee on Census Matters.

My Dear Sir,—On behalf of the State Dental Society of Pennsylvania, we, the officers of the said Society, most respectfully petition you to use your influence to restore those practicing the profession of dental surgery to the classification of the census report of 1880, to wit : "That persons following individual pursuits shall be classed together." In this classification, lawyers, physicians, dentists, druggists, preachers, teachers, etc., are so classed.

The dental profession protests against the provisions of the Willcox bill now before Congress, as far as it applies to its members, and against the classification this bill gives them. As well might general surgeons or the other specialists of surgery be classified among manufacturers, since there is no distinction, either in principle or practice, that we can perceive between us and them.

Permit us to call your attention to the general statements of fact in the accompanying remonstrance contained in the various classes 1 to 18, all and each of which is presented for your serious consideration.

We are most sincerely yours,

(Signed by the officers of this Society.)

Dr. Jack also submitted the following communication from Dr. John B. Rich :

1309 CONNECTICUT AVENUE, WASHINGTON, D. C.,
July 8, 1892.

DR. LOUIS JACK :

Dear Sir,—Dr. Noble handed to me your letter of June 28, 1892, to answer, as I was more fully informed on the matter than he was.

A number of committees of different dental societies met here some time since, and joined forces in opposition to the bill amendatory to the act authorizing the eleventh census. These associated committees elected me as their chairman, and I at once applied to the chairman of the Census Committee of the Senate for a hearing in opposition to some portions of the bill, on behalf of

the dentists. The hearing was accorded to us, and June 27 named as the date. I stated the objections the dentists had to the bill, and asked that the following amendment be added to the bill: "Provided that nothing in this act shall be construed as authority to collect statistics from professional men, such as lawyers, physicians, and dentists."

Dr. Thomas, of Philadelphia, and Dr. Twilley, of Baltimore, also stated some of the objections the dentists had to being classified as they had been by the Census Bureau. Mr. Porter then made a statement that he had only sought certificates of statistics from mechanical dentists, and endeavored to defend his course in the matter; he also introduced his Superintendent of Manufacturers Statistics, and he argued in the same strain; then followed some argument on our part, and nearly the whole Committee took part by asking questions in relation to how far dentists were manufacturers. During this questioning it became evident that the Committee favored our views about the matter. Mr. Porter was not slow to perceive this, and as he did not want the amendment added to the bill, as that would send it back to the House, he backed squarely down from the position he had taken, and said he did not want to do anything that would place the dentists in a false position, and if what he had done had produced that effect he would take them out of the classification they complained of. I then said that if the Superintendent would give us an agreement to carry out the spirit and purpose of the amendment we had proposed, the dentists would be satisfied. This he agreed to do; the clerk of the Committee drew up the agreement, and he signed it. We then withdrew our objections to the bill, the Committee reported it, and the Senate passed it that day, and on the sixth of this month the President signed it, and it is now a law.

So that we were successful in our resistance to the iniquitous proceeding of the Superintendent of the Census as far as the future of this census is concerned; but he claims to have collected statistics from nine-tenths of the dentists throughout the country already, and I am informed he intends to publish them in the census reports. This we want to prevent if possible, as it would be a precedent for future census superintendents. I am waiting for him to return to the city, when I shall seek an interview with him, and ascertain if he intends to so use the statistics he has already collected. If such is his intention, we must endeavor to stop it; and I will inform you of the result of my interview with him, and will be most glad to have your advice and assistance in the matter.

There you have the whole situation in this matter as it now presents itself.

Most faithfully yours, JNO. B. RICH.

Dr. Jack's report was on motion received, with the thanks of the Society for his efforts in reference to the Willcox bill.

The Secretary read his annual report as follows:

CRESSON, PA., July 19, 1892.

To the Officers and Members of the Pennsylvania State Dental Society:

The report of the business session of the twenty-third annual meeting of this Society was duly forwarded by me to the chairman of the Publication

Committee, within thirty days after the meeting, and from another source I learned some months later that it had reached its destination.

The report of the joint meeting being prepared and submitted by a special stenographer, and the editing of same done without consulting me, I am in no position to locate the responsibility for the delay in its publication.

The printed Transactions, two hundred in number, were delivered to me by express on Thursday last, 14th inst., and at once, on the same day, amid the pressure of office engagements, mailed to the members of the Society, with the assistance of a clerk hired at my own expense.

In preparing the minutes of the last meeting, I have taken the liberty to exclude therefrom such matters, enacted at the business session, as seemed to me irrelevant, unconstitutional, and otherwise unnecessary. For instance, several motions were adopted, at various stages of the session, with precisely the same effect; of these, but one is recorded. A regular order of business was suspended to take up another for the purpose of carrying out provisions of an amendment to the constitution not yet adopted. Questions were disposed of by vote, and afterward, without a vote of reconsideration, again voted upon with adverse results. A resolution was adopted accepting an amendment which had some time previously been regularly placed on file for one year.

Attention is called to this matter here with the hope that the valuable hours of this brief session may not again be similarly wasted.

I have expended during the fiscal year just closed, for all purposes of this office, the sum of seventeen dollars and sixty-nine cents. Of this amount, one dollar is for one hundred bound order blanks upon the treasurer, which is a convenience the Society has been greatly in need of for some years.

The Society has a membership in good standing at this time of about one hundred and ten.

A proposition was submitted to me, prior to the publication of the program, by Dr. Edward C. Kirk, offering to mail a program to each of the fifteen hundred dentists of this State free of charge for clerical work. The proposition was in return referred by me to the chairman of the Executive Committee, with the suggestion that the extra expense for printing would probably be too great, and that as a matter of economy a circular invitation be sent to non-members instead of regular programs. The Executive Committee will doubtless report on the matter.

In retiring from the office of Recording Secretary, I must beg the Society's indulgence to call attention to the fact that the work of the office has ever, or at least since my incumbency, been considerably hampered by the Society being burdened with too many officers. By this I do not mean that any incumbent has failed in his duties, but rather that because of the difficulty of dividing the work of the Society between so many, their duties intermingle and conflict, and much extra correspondence and unnecessary labor is thus entailed.

I would therefore recommend that the offices of Recording and Corresponding Secretaries be by constitutional amendment consolidated. By so doing I am sure that the Secretary will be spared much unmerited censure, and his work facilitated and labors lightened. In point of fact, the Corresponding Secretary, so called, is not the one who carries on the Society's correspondence;

this work being done with one exception by the incumbent of the office I represent, and that exception is the matter of giving due notice of meetings, a menial duty, which it is hardly fair to delegate to a special unsalaried officer, when it might, with less trouble and expense, be performed by the one to whom he must refer for his information.

The Publication Committee, too, it seems to me, could very well be dispensed with, for the officer who does the clerical work is certainly best prepared to attend to its publication.

As an example of what a few efficient officers can accomplish, I need only point to the Society which meets with us in joint session on this occasion. With its four officers, a President, Vice-President, Treasurer, and Secretary, besides a few necessary committees, it is almost proverbial for the precision, smoothness, and expedition with which it carries on its work.

Respectfully submitted,

C. V. KRATZER, *Recording Secretary.*

The report was on motion received.

Dr. Kirk explained that the delay in publication of Transactions of joint meeting at Asbury Park was due to errors and repetitions in stenographer's report of joint meeting, and that the editing and revising of same required several conferences with stenographer and others, thus consuming time.

Treasurer Klump being absent, it was on motion resolved that the Secretary procure a report of the Society's financial standing.

The Executive Committee made the following report :

To the President and Members of the Pennsylvania State Dental Society :

Your Executive Committee respectfully offers the following report :

✓ One year ago an innovation was inaugurated in regard to holding the annual meeting of this Society. In response to an invitation from the New Jersey State Dental Society, received one year previously, a joint meeting of the State Dental Societies of New Jersey and Pennsylvania was held at Asbury Park, N. J. The complete success of that meeting was very gratifying to all who were so fortunate as to be in attendance. This year, in return, the New Jersey Society has accepted an invitation to meet in joint session with us, and it is earnestly hoped that as our guests, in a measure, they may be as profitably and agreeably entertained as we were with them.

The same arrangements having been made as before, of leaving to the Executive Committees the selection of time and place of annual meeting, a conference was held in Philadelphia on January 30 for that purpose. By unanimous vote Cresson was agreed upon as the place of meeting, and July 21 fixed upon as the time. Committees from both Societies were appointed to arrange all the details of the joint meeting, and a program has been prepared which we hope will be satisfactory to all. All expenses incident to the joint meeting will be borne equally by both Societies, and any income from whatever source will be shared equally by both.

Your Committee, wishing to give a wide publicity to the meeting and develop as active an interest as possible, decided to send an invitation to

every dentist in the State and to many in adjoining States. On account of a number of unexpected and unavoidable delays in printing and mailing the programs, they were not distributed as early as was expected. No blame for this, however, should be charged to the Corresponding Secretary, as this Committee assumed the charge of the whole work.

Your Committee would recommend that at the next session of the State Legislature an effort be made to amend the dental law so far as to prevent the granting of certificates by the State Examining Board to any but regular graduates of dental colleges.

The Executive Committee in this connection wishes to acknowledge its indebtedness to the Secretary of the New Jersey Society for much valuable assistance, and to the editor of the *Dental Cosmos* for his generous aid in distributing the programs.

FRANK L. BASSETT, DANIEL NEALL MCQUILLEN,
P. K. FILBERT, W. H. FUNDENBERG,
C. S. BECK,

Executive Committee.

The report was on motion received.

The Corresponding Secretary made the following report :

Mr. President and Members of the Pennsylvania State Dental Society :

As Corresponding Secretary of this Society my report is necessarily brief. While I have attended to whatever work has come before me, much relief was given by the Executive Committee, namely, the issuing of the programs. The expenses incurred for correspondence, etc., I would report as being \$2.25, and respectfully ask that an order be drawn upon the Treasurer for the amount.

Respectfully submitted,

H. NEWTON YOUNG, *Corresponding Secretary.*

The report was on motion received, and an order drawn upon the Treasurer in favor of Dr. Young for \$2.25.

The following report was submitted by the State Board of Dental Examiners :

CRESSON, PA., July 19, 1892.

To the President and Members of the Pennsylvania State Dental Society :

Gentlemen,—The Pennsylvania State Dental Examining Board respectfully reports that it held a meeting in Justi's Hall, in the city of Philadelphia, July 14, 1891, at 9 A.M., all the members being present.

The Treasurer, Dr. G. W. Klump, reported as follows :

Balance on hand at Minnequa, 1890	\$30.00
Received for certificates	30.00
Total	<u>\$60.00</u>
Paid for legal opinion	5.00
Balance on hand	<u>55.00</u>
Total	<u>\$60.00</u>

Our delegate to the meeting of the National Association of Dental Examiners, Dr. Louis Jack, made a full and satisfactory report of proceedings.

Drs. C. S. Beck and J. A. Libbey were re-elected members of the Board to serve for three years.

The officers of last year were all re-elected.

W. E. MAGILL, *President*.

J. C. GREEN, *Secretary*.

The report was on motion received.

The Committee on Enforcement of Dental Law, through its chairman, Dr. L. Ashley Faught, read an exhaustive report.

On motion of Dr. C. N. Peirce, the report was received and ordered to be filed.

A motion to draw an order on the Treasurer for amount of bills presented in report was adopted.

On motion, discussion of the report was deferred until the afternoon session.

Adjourned to meet in same room at 2.30 P.M.

C. V. KRATZER, *Recording Secretary*.

AFTERNOON SESSION.

President Jack, in the chair, called the session to order at 2.30 P.M.

The minutes of the morning session were read and approved.

The roll was called, and several new arrivals responded. (Their names have already been chronicled.)

The report of the Committee on Law was declared open for discussion, pursuant to a resolution adopted at morning session.

On motion of Dr. F. L. Bassett, a vote of thanks was tendered the committee for the exhaustive report rendered.

Dr. S. H. Guilford moved that a committee of five be appointed to condense the report for publication. The motion was lost by a rising vote of 9 to 15.

Dr. Guilford then moved that all reference to dental schools be eliminated from the report. Motion lost.

Dr. E. P. Kremer remarked that while appreciating the great work of the Committee, and commending it for the pains it has taken in the preparation of this report, he yet considers it an injustice to the institutions referred to, because of the wrong impression conveyed by the references.

Dr. J. Foster Flagg indorsed the report, and suggested that if anything therein detracts from the reputation of any institution, such reference had better be eliminated. But he feared no such effect. He

thought, however, that the report might be materially strengthened by a condensation, as it is too voluminous.

Dr. Peirce did not favor eliminating the references to colleges and certificates, as the impression should not be conveyed that the colleges feared any damaging effects from the publication of the report as read; but he thought the reference to the illegitimate use of certificates should be made plainer.

Dr. W. F. Litch moved that the report be referred to the Committee for condensation.

Carried.

Dr. Peirce, as chairman of the Publication Committee, stated that he had no report to make further than to say that the Committee had submitted the report for publication to the publishers of the *Dental Cosmos*, as furnished by the Secretary.

The following amendments to the constitution were submitted :

Amend constitution as follows :

Article V, Section 1, of constitution, strike out, in second line, the words "two Vice-Presidents," and substitute therefor "Vice-President."

In lines two, three, and four of same section strike out the words "Recording Secretary and an assistant Recording Secretary, a Corresponding Secretary," and substitute therefor the word "Secretary."

Expunge Sections 4 and 5 of Article VI, relating to duties of officers.

Article VI, Section 3, amend by expunging the word "Recording" in first line, and add to the duties of the Secretary those now belonging to the Corresponding Secretary and Publication Committee.

Change Article IX so as to read as follows : "An Executive Committee shall be organized at each regular annual meeting, the members thereof to be appointed by the President, the Committee being privileged to elect its chairman."

Article X, strike out second section, fixing duties of Publication Committee.

Respectfully submitted,

F. L. BASSETT,
C. V. KRATZER.

Dr. J. G. R. Miller moved that, in view of the obstacles encountered by some of our committees because this Society is not an incorporated body, the Society do at once through its proper officers procure a charter from the State.

The motion was adopted, and the President instructed the Executive Committee to take the proper steps toward procuring the charter.

Dr. Magill, as chairman of the Legislative Committee, submitted the following report :

The Committee on Legislative Action respectfully reports :

That in its opinion some additional legislation is desirable, either in the form of amendments to the present law or an entirely new enactment to take the place of it.

It submits the following suggestions :

1. A new section, in substance as follows : " Every person shall be understood as practicing dentistry, within the meaning of this act, who shall for fee, salary, or other reward, paid either to himself or another person, operate upon human teeth, furnish artificial substitutes, or perform those acts, as assistant or principal, usually understood as and called dental operations. But this act shall not work any hindrance to the operations of *bona-fide* students of dentistry under the immediate supervision of a preceptor who is in legal practice, during the usual term of pupilage, not to exceed two years from date of commencement."

2. Change Section 2, law of 1883, so as to read : " Shall for a fee, not to exceed one dollar, indorse the same."

3. Change place of registration, and require every dentist to register with Examining Board and pay a fee of one dollar at time of registration.

4. Give justices of the peace jurisdiction over violations, and require district attorneys to prosecute.

5. Divide fines and penalties equally between the school fund and the State Board, and make income from all sources a fund set apart to meet expense of prosecutions for violations and general enforcement of the law.

6. Change phraseology of first section of law of 1876 so that physicians and surgeons shall not be allowed to practice dentistry without first securing the title of D.D.S. from a reputable school.

The object of No. 1 is to put a stop to violations of the law in one form which is quite common.

No. 2 is for revenue in aid of enforcement of law, and to remunerate for labor which is performed by our Secretary in increasing amount year by year.

No. 3 is to give us an accessible record of men in practice, and incidentally to raise a fund for enforcement.

No. 4 is introduced with a view to simplify and shorten proceedings at law, and to make it obligatory upon the State's attorney to prosecute.

No. 5 is also for revenue.

Nos. 1 and 2 are considered especially important, and we urge prompt and favorable action by this Society in the form of instructions to the Committee on Legislative Action for the ensuing year, to the effect that it shall endeavor to obtain such legislation as is indicated at the first ensuing session of our Legislature.

All of which is submitted.

W. E. MAGILL.

The report was on motion received and filed.

Dr. W. F. Litch questioned the propriety of the sixth recommendation of the Committee, as it might affect the extraction of teeth by physicians ; and we all know that in country districts, where dentists are scarce or wanting, M.D.'s are frequently called upon and required to extract teeth, especially children's teeth.

Dr. Cryer thought the section proposed might even interfere with a country physician's treatment of pulpitis, or the lancing of an alveolar abscess.

Dr. J. G. R. Miller moved that the Committee on Legislative Action be instructed to embody the recommendations of its report in an amendment drawn up in proper form for legislative action, and submit the same to the next session of the State Legislature.

Dr. W. B. Miller offered, as an amendment to Dr. J. G. R. Miller's motion, that the Committee embody in its amendments to the dental law a clause making it a criminal offense for any individual engaged in the practice of dentistry, not a graduate of a reputable dental college or university, to assume or publicly make use of the degree or title of "D.D.S."

Dr. W. A. Kessler desired to amend the latter amendment so as to read "the degree of D.D.S. or other recognized dental degree."

The amendments being accepted, Dr. J. G. R. Miller's motion, as amended, was unanimously adopted.

The following amendments to the constitution, submitted at the last meeting, were taken up for action :

Amend Article V, Section 1, after the word censor, to wit : "These officers shall be nominated by a committee composed of one member of each Society represented at the following meeting, said committee being empowered to make two nominations for each office except that of censors, where only one nomination for each shall be made."

A motion to adopt the foregoing amendment was lost.

Amend Article IV, Section 1, by striking out the words "as may be decided upon at each preceding annual meeting," in third and fourth lines, and insert the words "as hereinafter provided."

This amendment was on motion laid on the table for another year.

Adjourned to 8 P.M.

C. V. KRATZER, *Recording Secretary*.

EVENING SESSION.

The session convened at 8 P.M., President Dr. Jack in the chair.

The minutes of the afternoon session were read and approved.

Dr. Jack submitted a communication from Samuel D. Bodine, of Jersey Shore, Pa., asking for a beneficiary certificate of scholarship to the Baltimore College of Dentistry.

The request was on motion refused, for the same reason that all similar requests have been refused in the past.

Dr. Faught, as chairman of the Committee on Enforcement of

Dental Law, read the following as the Committee's condensation of its original report :

CRESSON, PA., July 19, 1892.

The Committee on Enforcement of Law would respectfully report that during the year it has issued copies of the law in true legal form, through the courtesy of the Philadelphia County Dental Society, without expense to the Pennsylvania State Dental Society. We have found that we need all the help from the journals we can obtain, and more than has been accorded in the past.

Your Committee desires to call your attention to an important advance in the enforcement of law which has been made during the past year. It was the work of the Philadelphia County Dental Society, and by it the indorsement for record this year of diplomas prior to their conference, or when sent in bulk to the State Board of Examiners, was stopped. This position is undoubtedly a great step in advance, and will tend to prevent much possible violation of law.

Your Committee has evidence of the wrong use of certificates issued by colleges, and would suggest that the colleges be more circumspect in the future, and that in no instance should the seal of the college be attached to such certificates when absolutely necessary to issue them.

Your Committee finds that this Society labors under a great disadvantage in not being an incorporated body, and recommends that a charter be secured.

In conclusion, your Committee submits the accompanying receipted bills, and asks that an order be drawn for the same :

Pennsylvania State Dental Society,	
To Wm. H. Hoskins, Stationer, etc.	
For letter-heads	\$6.50
(Marked paid March 8, 1892.)	
Pennsylvania State Dental Society,	
To L. Ashley Faught, chairman of Committee on Law.	
Postage stamps	\$6.00
Envelopes	2.00
Sundries	3.00
	<hr/>
	\$11.00
Received payment,	
L. Ashley Faught.	
Pennsylvania State Dental Society,	
To E. Clinton Rhoads, Attorney-at-Law.	
For copy of indictment, etc., Com. vs. Blair	\$5.00
Received payment,	
E. Clinton Rhoads.	
Alonzo Boice,	
W. H. Fundenberg,	
J. C. M. Hamilton,	
Edward P. Kremer,	
L. Ashley Faught, <i>Chairman,</i>	
<i>Committee on Enforcement of Law.</i>	

The report was on motion received and the bills ordered paid.

On motion, it was resolved that the recommendations of the Executive Committee relative to legislation be referred to the Committee on Legislative Action.

On motion of Dr. W. B. Miller, the thanks of the Society were tendered to the Philadelphia County Dental Society for copies of the Willcox bill.

On motion of Dr. Van Orsdel, a resolution of thanks was tendered to E. Clinton Rhoads, Esq., for drawing up the legal opinion for the Committee on Law.

Dr. Van Orsdel moved that twenty-five dollars be added to the Recording Secretary's annual salary of twenty-five dollars as prescribed by the constitution, making fifty dollars per annum.

The motion was seconded and unanimously adopted.

Orders were drawn upon the Treasurer for the following bills :

To C. V. KRATZER, for Recording Secretary's expenses .	\$17.69
To C. V. KRATZER, for Recording Secretary's salary .	25.00
To H. N. YOUNG, for Corresponding Secretary's expenses .	2.25
To F. L. BASSETT, for expenses of Executive Committee .	39.09
To L. ASHLEY FAUGHT, for expenses of Committee on Law	17.50
To R. B. CUMMINS, for expressage (by error in 1890) . .	1.70
To H. N. YOUNG, for expenses of Corresponding Secretary to July 15, 1891	7.85
To F. L. BASSETT, expenses for printing 2000 programs .	135.39
To F. L. BASSETT, for stenographer	50.00

The following officers were elected for the ensuing year :

President, W. E. Van Orsdel, Sharon.

First Vice-President, F. L. Bassett, Philadelphia.

Second Vice-President, W. B. Miller, Altoona.

Recording Secretary, Assistant Secretary, and Corresponding Secretary, C. V. Kratzer, Reading.

Treasurer, H. N. Young, Wilkes-Barre.

Board of Censors.—D. N. McQuillen, W. F. Fundenberg, P. K. Filbert, E. P. Kremer, W. A. Kessler.

State Dental Examining Board.—W. E. Magill, J. C. Green, W. E. Van Orsdel, Louis Jack, J. E. Libbey, C. S. Beck.

President Van Orsdel appointed the following committees :

Executive Committee.—Frank L. Bassett, L. Ashley Faught, C. S. Beck, J. A. Libbey, G. W. Green.

Publication Committee.—W. E. Magill, W. H. Fundenberg, F. L. Bassett, J. B. Keifer, E. P. Kremer, E. C. Kirk, C. V. Kratzer.

Committee on Legislative Action.—G. W. Klump, W. E. Magill, J. P. Thompson, J. A. Libbey, Alonzo Boice, H. N. Young.

Enforcement of Dental Law.—L. Ashley Faught, J. C. N. Hamilton, W. H. Fundenberg, Alonzo Boice, W. A. Phreaner.

Clinical Committee.—P. K. Filbert, D. N. McQuillen, W. A. Kessler.

On motion of Dr. Roberts, the selection of a place for holding the next annual meeting was left to the discretion of the Executive Committee, with full power to act.

Dr. Guilford moved that the Society hold its next regular meeting on the second Tuesday in July, 1893.

Dr. Faught offered as an amendment to this motion that fixing the time for the meeting be left to the discretion of the Executive Committee.

Amendment not accepted, and Dr. Guilford's motion lost.

On motion of Dr. Boice, it was decided to meet on the last Tuesday in July, 1893.

Dr. Boice moved that when we adjourn we do so to meet on the north porch of the hotel at 11 P.M. and proceed in a body to the Cresson railroad station, to meet the members of the New Jersey State Dental Society.

Motion unanimously adopted.

The Secretary announced that the books of Treasurer Klump had arrived, and were placed in the hands of the Executive Committee for audit.

The Executive Committee reported that they had audited the Treasurer's books and found the accounts correct.

The report was on motion received.

The Secretary reported that during the session dues were received to the amount of \$134.00 and initiation fees to the amount of \$51.00. Total receipts, \$185.00.

The minutes of the session were then read by the Secretary and adopted.

Adjourned to meet on the last Tuesday in July, 1893, at such place as may be selected by the Executive Committee.

C. V. KRATZER, *Recording Secretary.*

UNION MEETING

OF THE

Pennsylvania and New Jersey State
Dental Societies.

UNION MEETING

OF THE

Pennsylvania and New Jersey State Dental Societies.

OPENING SESSION, THURSDAY MORNING, JULY 21, 1892.

PRESIDENT B. F. LUCKEY, of the New Jersey State Society, called the meeting to order, and introduced President Louis Jack, of the Pennsylvania Society, who read his annual address as follows :

ANNUAL ADDRESS.

GENTLEMEN OF THE PENNSYLVANIA AND NEW JERSEY STATE DENTAL SOCIETIES :

In agreement with the custom on occasions such as this, it becomes my part to address you upon subjects of general interest to the members of the dental profession.

This being a combined meeting of two societies, it would appear proper to avoid the mention of matters which more directly bear upon the welfare of the Pennsylvania Society, and to leave for my successor a consideration of facts and recommendations which, if applied to the condition of this society, would lead to a widening of its influence and conduce to its greater prosperity and usefulness.

An address to men of a given calling can have no more appropriate theme than the condition and the requirements of that calling. The profession of dentistry at the present time presents some problems in the solution of which each and all of us must be concerned.

It is well, in approaching these, to commence with the inquiry as to what constitutes the ground on which we claim to be a profession. Is it because we are a branch of the medical profession, and from this does it inhere that we have professional status by a transmission of such an acknowledgment, much as the kingly right of the royal

parent pertains to a prince of the blood, or have we an inherent claim to the patent of professionalism? Are we professional by our relations to medicine by reflection, as the moon receives her light from the sun, or have we luminosity of our own?

Are we a branch of medicine simply, or are we more, and do we require and use branches of science which do not enter into the study of general medicine and surgery? If this latter question can be answered in the affirmative, we are more than medical men. If this be shown to be the case, it may be granted that we are a distinct profession. Nourished as we truly are by the collateral sciences which underlie medicine, if there open up to us other fields of scientific research not peculiar to medicine, we must be differentiated from it. And if there are studies of importance to medical men which are of no use to us, if there are principles required to be applied by medical men and we do not acquit ourselves in their mastery, the medical profession will not accord us the privilege of equality; they will not consider us their peers; and if not to the manner born, as it were, by the patent of the possession of the same acquirements, they will not recognize us as a real part of their whole.

Here at the outset it will be well to consider what constitute the elements of the so-called professions. What differentiates professional life from the inherent qualities of other pursuits?

Let us consider the three general divisions of the useful functions of men,—artisanship, the engineering, the professional.

The preliminary general education of many artisans may have been as broad and liberal as the general education of many men engaged in higher pursuits. But this with them only concerns the development of what conduces to general intelligence, and simply contributes to their standing as citizens and the growth of rationality in the conduct of their function, and prepares them to meet the responsibilities of life common to all men. It is at once seen that any man is better in all his relations by having been trained in the studies which enter into what is designated as common education. And it is the wide diffusion of this amount of mental training which gives the qualities of mind and character possessed by the American, English, and German workmen; but however well stored the minds of these may be, they in their functions do not rise above the level of their mechanical procedures. However trained their hands may become, they need no knowledge to aid them beyond that which concerns the outer and manifest physical properties of the materials they are engaged upon. The study of chemistry is not necessary to the pursuit of the worker

in the metals ; botany and biology are not required to be studied by the worker in wood ; anatomy and physiology are of no use to the man who handles leather, and so on.

These pursuits are limited to the application of that lower kind of special knowledge which is in a great measure traditional, being conveyed from man to man ; or directed into new courses by the evolution going on in the world, and again becoming subject to traditional descent. Those thus engaged have only the external elements of their minds in use in their employments.

But when a step higher is taken, and it becomes necessary to make scientific inquiry in view of the employment of the forces of nature for economic needs, there are opened fields of knowledge not necessary in the class we have just considered, and then is developed the engineer, — mining, civil, mechanical, architectural. For the culture of these all the forces of nature have to be studied, and also the physical properties of all the materials of which the world is composed. These need for their fitness a higher preliminary education to become properly qualified, and it is demanded they shall have added what is designated a scientific education, composed of a thorough knowledge of physics, chemistry, and the properties of matter, with technical knowledge peculiar to each of these branches of engineering. These are the minds which are making the external face of the world anew, and are filling it with greater comfort, wealth, and power. Notwithstanding this, these are concerned, however great their knowledge and ability, only in the development of the external world.

The professional functions, the next series of important uses, are of a still higher character than either of those before mentioned,—higher because they require a more varied knowledge and demand a much greater degree of previous mental training than is sufficient for those. Their studies include all facts, truths, and principles which have become embodied in human knowledge and have found their repository in the books which have been written upon all the branches of the sciences, including philosophy.

These uses are what have been called the learned professions. In these are included the legal, which has relation to the securing of the rights of man, the dispensation of justice, and the science of government in all its relations ; the medical, which is concerned with the most complete knowledge of the origin and processes of life and departures therefrom, the discovery of the laws and conditions which cause these deviations from health, and the application of means to

procure a return to the normal condition ; in short, the end of the function is to preserve the orderly relations of the outer body to the indwelling soul, so that the activities of the mind may have a substantial basis, a condition the ancients put in the concrete maxim of a sound mind in a sound body. The theological, which, as the term indicates, involves the knowledge of the principles and laws which determine the existence and the nature of the Divine Being, and the relations of the Infinite to the existence and subsistence of all things. These three great professions, as before indicated, comprise within their literature the sum of the most supreme knowledge, and call to their aid and illustration a greater mass of learning than concerns all the other functions of life, and tend to the highest degree of development of which the human mind is capable. Each, for the full preparation for the doctorate, demands that the previous mental discipline shall be most generous, and should be conducted in the manner which the consensus of the schools has determined, from long experience, to be best for opening and bringing into orderly and forceful action that most wonderful of all organizations, the human mind. The dignity, the respectability, and the social status of these professions are brought about principally by the mental discipline usually required to make entrance on these studies. The absence of this training is principally responsible for the existence of the pettifogger in law, the quack in medicine, and the fanatic in theology.

Justice has not yet anywhere fully shed her beneficent influence. The laws of life are not fathomed, and no law of cure has yet been clearly made out, except in some narrow directions. The knowledge of God and His relation to the objects of His creation is scant, and the prevailing schemes of redemption require reformation.

Short of their possibilities as are these three professions, they are a tripod on which rest the greatest and most important necessities of the race. In the modern evolution of human learning, which commenced in the middle of the last century, they will not cease to advance until the knowledge of each and the fruits thereof will satisfy the demands of human needs.

Now to which of these several uses of life is dentistry allied ? Is it a branch of one of these functions, or is it so differentiated that it stands alone and is a distinct profession ?

It is commonly claimed that dentistry is a specialty of the healing art, and when it is perceived that all the medical principles included in the studies of biology, physiology, chemistry, pathology, the principles of surgery, materia medica, therapeutics, the general

principles of the practice of medicine, throw light upon it, and that the full knowledge of their application prepares the devotee for a more intelligent and efficient practice of dentistry, we are forced to the conclusion that dentistry inherently seems to be a specialty of medicine and surgery, and if its disciples were taught as fully as they should be the acknowledgment would be clear and undeniable that its position would not be an inferior one to general medicine.

A little examination, however, will make it appear that dentistry in its possibilities goes even further than general surgery. It will be seen that it has connection with each of the three general classifications of the functions of men. The technique of its operations is related to artisanship ; it borrows its inorganic chemistry and metallurgy from the sciences pertaining to the mining engineer ; through its use of speeded appliances and electrical devices it is related to the mechanical engineer ; and, as before stated, in the medical sciences are found its indispensable guides.

It would thus appear that we are more than medical specialists, and that no amount of mere medical teaching alone would make a dentist of any one. Medical schools prepare their pupils in ophthalmology, gynecology, otology, etc., with their ordinary force of teachers ; but none of them would pretend to do that for dentistry without establishing a corps of adjunct teachers for that purpose. This would indicate that if we all are properly qualified in the medical sciences, and at the same time specially prepared by the necessary complement of teachers, we necessarily are more than specialists related to medicine.

But dentistry has been subject to peculiar dangers to its efficiency and to its standing as a profession. For reasons which time forbids to be entered into with fullness, too large a portion of practitioners have allowed their minds to rest in the lower function of their art,—the mechanical,—and have neglected to become cultured in its higher elements. This is the tendency of men who have not had that degree of early education which induces them when the practical duties of life are laid aside to take up those thoughts and studies that pertain to the sciences and to intellectual culture.

An inevitable consequence of lack of scholastic training is to determine the mind toward its external activities, toward manual efforts. This condition of affairs has been largely due to the inferior view the dental faculties have taken concerning the requirements for matriculation. Up to a recent period nearly all applicants for matriculation were received, and since a preliminary examination has been required

the standard has been of too elementary a degree, and, unfortunately, is conducted by those who have had the interest to make up as large classes of matriculates as possible. This interest induces the tendency toward leniency, the faculties not sufficiently appreciating as they should that their greater obligation is to their profession and to the public.

As chairman of the Committee on Colleges, the complaint is being made to me that young men who have been taken as laboratory and office helpers, without more than the commonest school education, are, after two years of pupilage, entering the ranks of the dental profession. This is one of the degrading influences which have been keeping low the standard of dental education, and have been launching too large a number of poorly fitted novitiates upon the public. The inevitable consequence of this is to produce an indifferent opinion concerning the claim that dentistry is a learned profession. If one may, from a common workman with a little knowledge of English, be relegated, in the short period of eighteen months, or, as now, thirty months, to the performance of one of the most difficult and responsible functions, what must be thought by the intelligent members of the community which requires five years for its members to learn properly to do the work of ordinary trades, of a pretended profession which has no higher preliminary standard than the majority of the schools require?

How different the result would be in case each student had been required to have at least an academic education, or have been subjected to the most rigid tests by an academic board independent of the dental schools. How great the eminence of dentistry soon would be if these were the requirements for admission.

There are, however, brighter indications for the future ; and if the pressure of the opinion of the profession be continuously brought to bear, the promises made concerning the three-years' courses now commenced will be beneficial.

The examination boards have been useful in the direction of higher education. They are the mouth-pieces of the profession, and are endeavoring to enforce its most enlightened wishes, and have no other motives than the securement of higher standards and the fulfillment of the laws. They have also in view the advancement of the inferior schools to the standard of the higher ones. The necessity for this will appear when it is considered that of the thirty-eight dental colleges, the gradation is from an approach to excellence downward to marked inferiority. Of this number, only twenty-eight are upon

the list of reputable schools. It is therefore easily perceived that the problem of equalization is not an easy one, and many a year of contest will have to pass before there can be peace. The relations of the faculties and the examining boards unfortunately have been somewhat strained, because the latter, recognizing and being familiar with the deficiencies of multitudes of the graduates, have urged further advancements and greater caution upon the part of the schools. This irritation is natural; but it is, however, unreasonable. No student should be passed whose requirements are insufficient to enable him to withstand any examination to which he might be subjected, and most certainly the state boards should have the right at least to ascertain what the practical ability of each candidate is whenever the condition of public opinion demands this. Several of the States, in the exercise of their municipal rights to protect their citizens, have granted the examining boards the duty to examine all persons intending to practice dentistry within their borders, whether they be graduates or not, and whether they be of schools within their own States or not. As the bearer of a diploma may, notwithstanding, be of great deficiency of practical capability, of inferior intelligence and education, to weed such out of any commonwealth is certainly an inherent right, and while such a measure does not invalidate the diploma of any school, it sends the possessor, if he fails to successfully meet the tests, into some section where the people are less exacting, and where the injurious consequences of imperfect preparation may be less.

The inevitable result of the exercise of this privilege must induce neighboring States to those having the right to examine graduates to protect themselves by reforming their dental laws in accord. The effect can hardly be different than followed the passage of the earlier laws regulating the practice of dentistry, nearly all the States having sought similar enactments for their protection.

Already the right to examine graduates by the boards of Massachusetts and New Jersey has been productive of good results, since it has caused an awakened action on the part of the schools most nearly interested. The action of these States is probably precursory to the adaptation of the methods for determining qualifications in Europe. As we progress to the higher standards of culture of older commonwealths, similar means of securing protection and furthering growth will be sought.

The faculties have taken umbrage at the tests of the boards, as being assumed by men not competent. This may be considered a

reflection upon themselves, since the faculties have made the materials out of which the boards have been created, and to reproach the examination boards with this criticism is a condemnation of the general system of dental education.

It may be fairly assumed that teachers, examining boards, and the profession generally are in an inchoate condition. Schools, boards, and graduates, therefore, should, acting together, endeavor to organize, carry out, and make general the efforts for growth in science and improved practice until we shall become in reality what we claim to be,—a learned profession. The way is sufficiently clear, and the struggle will not be nearly so difficult as it was for the medical profession to advance out of the low state it held in the last century.

Thus far I have only indicated the mental drawbacks of our fraternity. It is not difficult to discover the moral ones which have retarded and are delaying advancement. These are the diffusion of the trade spirit, the quackery that is involved in the dispensation and use of secret preparations, and the deficiency of altruistic sentiment.

In respect to the first, the error is shown in the endeavor of many to take possession of their ideas in such manner as to give them a proprietary right in them, as is apparent in the many patent claims for methods and appliances which should have been freely given for the use of all. The bounden obligation in the liberal professions is that the thoughts of each should be free to all, since the contribution each may give to the sum of knowledge is small in comparison with the large benefit he has received from the fruits of other minds.

At this place I have no desire to enter into what would be a large subject ; but if we are professional at all, it is entirely inconsistent with the pretension that any one should secure control of procedures or the use of appliances for his own exclusive benefit. With the exception of a few notable improvements, the mass of patent claims pertaining to dentistry are of the most trifling amount of ingenuity, and are unworthy those who are under the moral obligation to fulfill the maxim, "Freely as ye have received, so freely give."

The endeavor to impose upon the profession by dispensing for gain secret formulæ of any of the preparations or materials we use is a still more reprehensible practice, and the use of such should be discouraged as derogatory to our standing, and those who profit by their dispensation should be excluded from any and every society. To effectually stamp out this evil there appears only one means of action, which is for each practitioner to refuse to use any preparation the ingrency and the proportions of which are unknown to him.

Again, the dental profession is not sufficiently disposed to stand shoulder to shoulder in public movements promising advancement. See with what difficulty and with what urging the members have been induced to support the work of the Dental Protective Association. Observe with what coldness it has viewed each attempt to establish journals independent of trade influences. Notice how slow its members have been to aid in the enforcement of the dental laws, which have been enacted for the general good.

Much more might be said with profit in illustration of the matters in this address ; but as two papers on dental education are to be read and discussed, any further extension might prove superfluous.

In some connection with the trend of this address are two subjects, the suggestion of which may provoke discussion. These are the necessity for the confinement within reasonable limits of dental labor, and the too frequent inadequacy of compensation for these efforts.

When the hours of labor are extended throughout the day in the office, and the evening probably employed in the laboratory or in some details more or less directly connected with dental operations, or over accounts and business correspondence, the opportunity for study and investigation is removed. The consequence of this is a fastening of the mind too much to the lower features of practice, and not sufficiently to the consideration of principles. Under these circumstances little time is found by even those best qualified to record their observations and to prepare papers for the benefit of all. When the time becomes so occupied that the pressure is a burden in any manner, the condition exists which ordinarily should enhance the reward which is the due of every one who is well occupied in dental service. It does not appear that there can be any fixed rate at which charges may be made for dental services, as there are many and varying factors entering into the problem. What one may receive cannot be a fixed standard for another. It is a fact, however, that the average intrinsic value of dental services the country over has been much improved, and that the distribution of ability is far greater than was formerly the case. For this reason the people have acquired greater confidence in our operations, and are prepared to better remunerate those who are capable. Any consideration which throws light upon this matter is of importance, and any just method of elevating our fees which may be found to be applicable must be considered a laudable one. Not only should the compensation for a reasonable number of hours be adequate for the daily wants, but provision should be made

for advancing years, when it is inevitable that the income must necessarily be diminished.

There need be no hesitation whenever the conditions are favorable to secure adequate remuneration, since no worker is more worthy of liberal compensation than he who faithfully and persistently follows our calling. The importance and value of teeth are so great that no ordinary fee bears any relation to the benefits of good service.

In connection with this subject it should be kept in view that too much of exhaustive effort is a condition inclining to reduction of usefulness by the impairment of the bodily health, and that insufficient remuneration is not only discouraging : it is unjust, and has a degrading tendency. In further extension of this subject, one should have in mind to sustain his fellows in a general elevation of remuneration in his neighborhood, being upright and consistent in the application of the rules which guide in computing the fee, and supporting them by advice and by defence where they give evidence of being guided by what is right.

In conclusion, it becomes my great pleasure to welcome among us the members and friends of the New Jersey State Society. We are to be congratulated at having made this association with them. They have been noted for their energy, their enterprise, and their liberality. They have been good and cheerful hosts to us, and we are ready to open our hearts to them in return. This meeting cannot otherwise prove than of service to each society. Our friends have brought to us the open-hearted, the generous impulses and the cosmopolitan spirit of a people living under the influence of the life of two cities which hourly throbs through their midst. Last year they were generous and hospitable to us by the sea ; now we give them a welcome greeting to the air which breathes through these everlasting hills.

I have now the satisfaction to give way to the President of the Society of our guests, Dr. Luckey, whom I now introduce to you.

President Luckey, of the New Jersey Society, then read his annual address, as follows :

ANNUAL ADDRESS.

MR. PRESIDENT OF THE PENNSYLVANIA STATE DENTAL SOCIETY,
AND GENTLEMEN :

As President of the New Jersey State Dental Society, it is my privilege as well as my duty to address a few words to you before you settle down to the work that has occasioned your assembling

here. It is not necessary for me to remind you that these annual gatherings are sources of benefit as well as of pleasure. Dentists, and it is as true of all mankind, never felt the impulse of life, never began to grow, until their hands were crossed in the fraternal bonds of friendship, until they came together on a common platform of professional equality, subject only to such rules as should govern gentlemen in any walk in life. When the first dental society was formed dentistry began to breathe, and now by reason of the rapid multiplication of societies until there are more than one hundred in this country alone, I may say, without fear of boasting, that dentistry is more than a well-developed infant. When it will reach the period of full development, no man knows; but certainly not until every avenue or source of knowledge or improvement has been thoroughly searched and ransacked, and its treasures brought forth for the enrichment of the body.

What is true of dentistry as a whole is true of dentistry in New Jersey. It never existed as a profession until the organization of this society, twenty-two years ago, by a small band of earnest men. The work so well begun by them has been carefully and conscientiously carried forward ever since. While but few remain of those who assisted at its birth, the mantles of the departed have fallen upon worthy shoulders, and the work goes on with increasing interest every year. We are gaining in strength numerically, professionally, and socially. Numerically we are stronger than the society has ever been before. Professionally we are gaining continually by the high character of the papers read before us and the equally instructive and interesting discussions that follow, by the support given to such dental legislation as is aimed at the purification of the professional atmosphere, and the maintenance in our State of a standard to reach which a man *must* be a *dentist*; credentials, diplomas, are not sufficient. Socially we are growing. Last year, on attaining our majority, we had a party, and the Pennsylvania State Society helped us to celebrate, and a royal good time we had. Now we have put on our holiday attire and come over into Pennsylvania, at their kind invitation, to help them have another good time, and we are in good company to have it, mentally, morally, and physically.

It is not often that dental society meetings are held under such favorable auspices and in such a delightful place, and for our good fortune in this respect we are under an obligation to the Pennsylvania Society that I fear it will be difficult for us to discharge. We appreciate fully the brotherly feeling that prompted them to extend an in-

vation for us to meet with them at this time, and I earnestly hope that the benefits derived and the friendships formed may endure to the end of life.

We are banded together for mutual improvement, professional advancement, and the public welfare.

All that concerns dentistry concerns us ; and as dental education and dental legislation have been the uppermost topics in the professional mind for a long time, it may be well for us to consider our position in regard to those topics.

As every profession is founded and built upon its educational system, it is absolutely necessary that such system be deep enough and broad enough to sustain the superstructure built upon it. History up to the present time would seem to indicate that the system of dental education in this country is more or less faulty ; whether more or less, depending upon the mental development and visual clearness of the observer, but, more or less, admitted by all.

What are our means of education ? Dental colleges, journals, and societies.

Of colleges there are more than thirty, nearly all of which are private corporations, organized and conducted primarily for the purpose of private gain, which is the chief source of weakness in our college system. There is fierce competition between them for matriculants (which is only another name for money), and as the list is either long or short so are they considered successful or unsuccessful institutions.

We have too many colleges. Reduce the number ; have those that do exist endowed, if possible ; make the position of professor or instructor a salaried one, with the whole time to be devoted to the interests of the college with which he is connected ; and have all final examinations, both theoretical and practical, conducted by an independent, disinterested, outside board of examiners. Then a dental diploma would mean something, and would be something to be proud of. I do not mean to condemn our colleges *in toto* ; they are doing much good work. But our quarrel with them is that they do so much poor work ; in other words, allow so many grossly incompetent men to graduate and go forth to prey upon the community, a disgrace to their *alma mater*, a barnacle upon the profession, and a sore trial to the professional brethren with whom they come in contact. We do not ask for fewer graduates, but that every graduate shall be properly qualified. To him we will extend the right hand of fellowship, and greet him with a cordial welcome. I am satisfied that the number of

dentists is not being multiplied faster than the demand for dental service requires. While it is true that the number graduated each year is large (last year something over twelve hundred, I think), still every year sees an increased demand for dental services, not only in the increase of population, but in the education of the public to the necessity for careful attention to their teeth. It is a fact that a very large proportion of the population only seek a dentist for the purpose of having teeth extracted or artificial dentures inserted. What could our army of between fifteen and twenty thousand dentists do toward meeting the demands of a population of over sixty millions of people if they were all educated up to a proper appreciation of their teeth, and were financially able and willing to care for them?

Another reason why I think there are not too many graduates turned out every year is that probably nearly as many active practitioners retire every year through various causes,—death, old age, ill health, change of business, or the accumulation of a competency. While I have no statistics bearing upon the subject, I do not think it a wild statement to make that the number so retiring each year is between five hundred and a thousand, which if true would not leave a very large number of additional recruits for the ranks.

Dental legislation is exercising the profession throughout our land. And well it may, for next to dental education the most important foundation-stone upon which the profession rests is legislation. But lack of harmony between different sections of the country has brought about a deplorable state of affairs; for it is deplorable that so many different laws should exist in different States, one conflicting with the other. New Jersey has had an extended and extensive experience in this direction, its first law being enacted in 1873 and its last in 1890. The last law, bringing into existence a State Board of Examination and Registration, before whom all persons seeking to commence practice in the State must appear for examination and registration, has been the subject of much unfavorable criticism; but mainly, I think, by those who are hurt by its operation, or those who by reason of their mental make-up could not in politics be other than persistent free-traders.

There were two causes that led the dentists of New Jersey to frame the law of 1890. One was the large number of thoroughly incompetent men coming into our State bringing with them diplomas from reputable colleges. There was no way to reach or stop them, for they had complied with the law when their diploma was registered in the County Clerk's Office in the county in which they practiced, and

consequently they multiplied rapidly, and we found cheap and sometimes disreputable offices springing into existence all over the State, doing much harm and working great injustice to the public, and bringing reproach and discredit upon the profession.

The other cause was the peculiar geographical position of the State. Lying between New York and Philadelphia, with only a narrow stretch of ninety miles intervening, its territory thickly settled with prosperous towns and villages, it offered a tempting field of operations for the riff-raff and disreputable members of the profession who by force of circumstances were compelled to leave those two great centers. The law was not conceived in selfishness, as has been claimed, nor to oppress. No worthy qualified man has ever come to our doors and been repulsed or refused. If he has the knowledge and ability to entitle him to practice in any enlightened community, it will not take him long nor will it be a hardship for him to demonstrate it and be welcomed; while if he be not possessed of those requisite qualifications, it will not take the board long to discover the fact; and who will say that an injustice has been done when such a man is refused a license to practice?

Since going into operation the law has been working smoothly, and so far as I am aware has given general satisfaction to the profession of the State. The members of the board have performed their duties faithfully and fearlessly, and are entitled to the hearty support and encouragement of every practitioner in the State. When all state laws are abolished and an acceptable national law substituted, protecting alike the interests of the colleges and the individual practitioner, when our dental colleges are conducted as they should be, we will emerge into a professional atmosphere that will inspire new life into every man connected with dentistry, and permanently secure our position in the professional world beyond a peradventure or a doubt. It is a consummation devoutly to be wished.

The coming year will witness the assembling of the World's Columbian Dental Congress in Chicago, the first distinctively international dental congress ever held on American soil. It is the duty of every dentist who loves his profession, who has a desire to elevate its standing or to widen its field of usefulness, to do everything in his power to advance the success of that meeting. Let every one send as liberal a contribution as he can afford to the Finance Committee, and let *every one* attend the meeting whether he can contribute or not. A large, an overwhelming, an enthusiastic meeting will encourage the officers, compel the respect and attention of the world, and inspire in

the breast of every attendant an increased self-respect and a renewed determination to bend every exertion to the further elevation and broader development of the profession which every true dentist loves.

Another matter which should not be lost sight of is the Dental Protective Association. Dr. Crouse has so repeatedly urged its claims and presented its advantages to you that it is not necessary for me to do more than urge upon every one of you the fact that it is to your interest to give it your financial and moral support.

It is earnestly hoped that every member will bear in mind that the occasion of our presence here is not entirely for pleasure ; that it is merely incidental, and that they will by prompt attendance on the sessions, careful attention to the papers, and active participation in the discussions maintain the enviable position in the dental world of which the New Jersey Dental Society has long been proud.

President Luckey. Gentlemen, these papers are now open for discussion, and it is hoped that you will take advantage of the opportunity and discuss them to the fullest extent.

DISCUSSION.

Dr. J. Allen Osmun. Mr. President, I rise under some degree of embarrassment, yet I cannot let these two papers pass for want of discussion. My experience in dental societies is that some member has to be sacrificed in order to start the discussion, so in this instance I will be a willing sacrifice.

The first point that I would like to take up in Dr. Jack's paper is that of dental education. Undoubtedly, while we are in session here to-day and to-morrow, we will hear a great deal about dental education. It has been in the air for some time past. During the last two or three years a majority of the society discussions and the great bulk of the remarks made from time to time have been along the line of dental education and the enforcement of law. The points that were made by the President of the Pennsylvania Society in his address were admirable ; they struck the keynote and the very foundation facts. What he said in relation to dentistry being a specialty of medicine is worthy of more than a passing notice. But it is the enforcement of law ; that is the great question, the core of the whole thing. We have laws ; but what in the world is a law for unless it be enforced ? It is worse than a dead letter ; far worse than if it were never placed upon the statute-book ; and I am very glad, Mr. President, that these two societies have emphasized this fact. It is essential

that we should have our laws enforced, and in consequence of the non-enforcement of laws the dental profession has been placed in an embarrassing position. It has been quite a common saying among dentists in New Jersey in the last five years, or prior to that time, "Well, what is the law good for, anyway? I am not afraid of the law." That resulted from the non-enforcement of the law, and the profession of dentistry in our State was placed in an embarrassing position.

The point made in reference to patents cannot be emphasized too much. There is no discovery or improvement in the practice of dentistry that would benefit the profession or their patients that the dentist who possesses it is not under bounden obligation to give to his profession. He owes it to them.

The question of preliminary examinations, which Dr. Jack so ably brought out, cannot be emphasized too strongly. On that point hangs the whole subsequent condition and career of the man. The fact that many young men go into a dental office and study a little while, and are allowed to matriculate and become students in a college, and are graduated without having undergone a strict preliminary examination, is an unfortunate thing for the profession of dentistry.

I will pass Dr. Jack's paper without further comments, although I could talk an hour and a half upon it. The President of the New Jersey Society made one or two points that I would like to emphasize as a Jerseyman. First, that in regard to endowing colleges and salarying professors. Undoubtedly that strikes at the very foundation of successful dental education. If we could only attain to this end, if we could have endowed colleges, or have one college in which the professors received a stated remuneration or salary for their services, not depending upon fees, it would go far toward placing the dental profession on the plane of a higher dental education; and until that time comes dental education and dental colleges will be somewhat under a ban.

I come to a little hobby of mine now, that I have brought out on all occasions for two or three years; that is, the education of the public. Dental societies do not comprehend that, do not appreciate the significance of this idea. Dr. Jack, in speaking of fees and the remuneration of dentists, said that dentists were being better remunerated all over the country to-day than they were ten years ago. Why is that? It is because the public have taken to themselves a little of the information that we gather and talk about; what we do and say will leak out, and the public gets a little of it, while they ought to have an abun-

dance, and they get a juster appreciation of our work. There has been a feeling that the public do not appreciate our efforts in their behalf ; do not comprehend the labor and study and skill involved in the operations which we perform for their benefit ; and that is in a measure true ; but once they have learned it, they are generally willing to remunerate the operator to the fullest extent when able. And the more intelligent the patients are the more they appreciate dental services, or any other kind of services.

Let me say a word about our New Jersey law and its enforcement. I met a man who had just failed to pass our examining board last January, a graduate of a reputable college, and he was very bitter in denunciation of one or two of the examiners. I said to him, "What did they ask you? Tell me the questions you were asked." He did so ; and I give you my word, gentlemen, there was not a single question that the examiners asked that student that he should not have known, and known well. I said to him, "Why didn't you get this information in college?" for I know that college teaches those things fully and with much amplification. "Well," he said, "I was out with the boys and had a good time, and I found out a few things that my professor had as hobbies, and I thought that if I had those things down pat I would get through, and I got along very well with him ; but this examiner never touched on those things at all." Of course he didn't. He did not intend to. Now New Jersey takes the position that the law must be maintained, and she is going to enforce it.

Dr. S. C. G. Watkins. Mr. President, it is a long time since New Jersey has heard from Professor Flagg, who is present here, and it seems to me that it would be a very fitting time for Professor Flagg to talk to us now and help to fill the breach.

Dr. J. Foster Flagg. Messrs. Presidents, Secretaries, etc., my reputation has always been that whenever there was a hole I make for it. The entomologists will tell you that where one hornet has made an attack, all the other hornets come right into the fight. I am a hornet, and always have been, as I was born in New Jersey, and I love the whole State from the Palisades to Cape May, and I am in with the hornets.

There are so many points in the discussion of this matter, the subject is so great, that it is impossible to touch upon more than one or two at this time ; but some of the points are of immense importance. The addresses of the Presidents were both admirable essays ; and we have a right to expect that,—we would not have made them Presidents if we didn't ; yet there seem to me to be some things of vital impor-

tance that have been overlooked or barely touched upon. First, the question of education. The faculties of the various colleges are touched upon, but they are touched so lightly that the colleges have not been touched at all. The fact is that they criticise themselves, they sit down on themselves a thundering sight more than they have been sat upon. There is no man in the dental profession who recognizes the shortcomings of the dental colleges one-hundredth part as much as the college teachers themselves do. I say that strongly, and I call upon my fellow-teachers here to bear me out in it. We have recognized the shortcomings of the colleges ; we have grown old and gray and wrinkled (and thin) in working out remedies for these defects. First and foremost, we have hailed the examining boards. I tell you that when the question of examining boards was first proposed, away back in 1776,—no, 1876 I think it was ; if I get within a hundred years I am very close,—away back there when the examining boards were first proposed, at the first blush of the proposition we recognized the fact that they were our salvation. We recognized the fact that they were working for us and with us. We recognize the weight that is on our shoulders more than the gentlemen outside of the schools do ; and I appreciate the remark of the man who said, “If you want to know how to run any business, go to somebody that never ran it.” We saw that point, and saw the influence which the examining boards would have.

Now, in the schools we feel that these boys when they come to us are our sons ; we have very warm hearts for them ; and the girls that come to us, we have a mighty sight warmer hearts for them.

Now you recognize, as well as we do, the fact that our students are our clients; we work for them, and we must have money to pay us to do the work. I ask you, Messrs. Presidents, Secretaries, etc., was there ever a schoolmaster under God’s heavens who set up a school that did not do it for the sake of the money he would earn by it? Very few. There was one in our profession, Dr. ——— ; he taught school for the fun of it ; and was there ever a greater failure in the profession than he was? He died as poor as Job’s turkey,—poorer than the turkey. I don’t want to die that way ; I want to be paid for my work, like my friend Louis Jack, who says, “Ten dollars an hour or nothing.” And it is worth it, isn’t it? I am not wrong there, am I? If so, I beg his pardon. I did not know he had raised it to fifteen dollars.

Now, gentlemen, don’t you see that with each of us there is an incentive to pass and graduate men who are utterly unfit? They come

to us, they work with us, and they get around us in some way,—I don't know how,—and the result is that some young men who are utterly incompetent go out from our schools. Do we know it? They work hard; they are present at every lecture; they are in the seats with their eyes wide open and their mouths wide open, drinking it all in,—poor as it is; we see them every day, and we get to know those boys, and we hope that when they come up for examination they will pass a good examination. What do they do? They are required to make a set of artificial teeth, and they take an impression, which is a wretchedly poor impression; so they say to some fellow-student who is able to take a good impression, "Here, I am going down-stairs a minute; you just take this impression for me, and I will be right back." So the good man takes the impression. Then the poor man swages up a plate, and it is the poorest kind of work; so he gets another man to swage up the plate for him. He sets it in plaster, and where the single teeth are to go he sets them, but where a few teeth are to be ground up together he finds he can't grind them up; so he gets another man to grind up the gum teeth for him. And that piece of work is finally put in by this fellow as his work. He could not do it to save his soul; but how is the teacher to know that? Do you suppose we are going to watch every student at his work? Then, if a student has to prepare a cavity and don't know how, he gets somebody to do it for him. He can't put the gold in, so he gets some one else to do that; and perhaps he can't finish the filling, and he gets somebody else to finish it up for him. Finally he brings it to my good friend here, or to me, and he is asked, "Did you do this work?" and he says, "Yes, sir," and he lays his hand on his heart. Then he comes up for examination, and we ask him questions. I would like to read to you, gentlemen, a list of some of the questions that I have asked the students who pass before me. If it don't take in the whole range from A to Z, then I don't know anything about dentistry,—that is, in my branch; I have no idea what they do in the other branches, but in my little branch of dentistry I examine students thoroughly, and I ask them questions that I doubt very much if many of my brother hornets could answer. We have forgotten the things we used to know in school, but we keep up with the procession pretty well in practice, and run dentistry decently well in our offices. And so it goes on. This man comes up for examination, and his fingernails are written all over with letters that he understands, and he gets beside some fellow that he knows is well posted, and he nudges him when a question is asked; and so finally he gets 41. He wants 42.

That fellow, with all his cheating and defrauding, gets 41. And then I say, "Well, gentlemen, I voted 5 for that fellow; I think I can go one more; I will give him 6." Would not any one of you do that? I ask you, Are you such hard-hearted cusses that you would not do that? No; particularly for your sons. Of course you will do it. You say, He has worked hard, he is a reasonably good man, a thundering sight better than I was when I started in practice; I did not know one-tenth part as much when I started, so I can afford to give him one more. So he gets 42, and he passes. And he goes out and he says, "I guess I got about 59 out of them 60 votes."

Now when my friend Dr. Osmun said, in speaking of the gentleman who failed to pass the examining board, that he came from a reputable college where they taught those things *in extenso*, I at once assumed that it must be the Philadelphia College, because I would like to know where they teach things any more *in extenso* than they are taught in that college. If the students that go out from that college knew everything that is taught in it, they might rattle most of you old men.

Now, referring to what our President has said about the examining boards, there should be no differences between them and the schools. If the students cheat us into believing they are fit to pass, they cheat themselves a hundred times more than they do us. What is the incentive for that? It is simply that as a result of possessing our diploma they are enabled, in many States, to practice. That is the bottom of it. If they could not practice under that diploma,—if it only stated that these gentlemen have been sufficiently prepared to come before your examining boards and take your examination, that we have examined them and think they are capable of passing your examination easily,—if these men, having passed our examination, could not practice until they had passed another examination before your examining boards, don't you suppose they would embrace the opportunities to learn that we give them, don't you suppose they would learn how to prepare cavities and take impressions and swage plates and grind teeth? Of course they would, because their right to practice would depend upon their ability to demonstrate their knowledge of these things before you. But your law says that your examining board "*may*" examine a man who brings a diploma from a reputable college. You "*may*" examine him. I think our law says he *must* be examined. I would like to be informed on that point. Can a man pass before our board and be registered without an examination?

President Jack. No, sir.

Dr. Flagg. That is what I say ; but this miserable little two-cent Pennsylvania law,—I beg your pardon ; I forgot that I was a visitor,—but this same Pennsylvania law says that the examining board *may*, at their discretion, examine candidates that come before them with diplomas. Talk about our being hornets in New Jersey ; why, there is nothing in our constitution that is a hundredth part as hornety as that word “*may*” in your state law. Why should one man be examined and another man be allowed to pass without examination ? The board cannot take that responsibility. It should be as our law is. If a man brings a diploma, that man should be able to go before the State Board of Examiners and answer their questions, and if he cannot answer them he ought not to be allowed to practice. You can reject him just as well as we could, and he will take it a great deal better, and that would take all the onus of the thing from the board.

Look at the Michigan board and State law. If a diploma is brought to that board from a college that has attained the same status as the Michigan University,—just think of it, as high as Ann Arbor !—he will be allowed the same privileges of which Ann Arbor is the status. If a man brings a diploma from Ann Arbor, in the State of Michigan, he passes ; and if he brings a diploma from any other college of the same status as Ann Arbor, he passes unquestioned. What is the status of Ann Arbor ? Three years’ attendance on lectures, of nine months each year. Is that the right kind of status ? There are many men who don’t want more than nine months, while others might want nine years. The Ann Arbor board should be compelled to examine every man openly and aboveboard. When the laws are uniform in the different States,—there never can be a national law, but all the States could agree in their capacities to have the laws uniform and alike, and that would be the proper thing,—then if a man were examined before a state board and passed, that should be his examination for his lifetime. He should be allowed to practice anywhere in the United States from that time on, and he should not be compelled, when he goes from one State to another, to go before another examining board. As the laws are now, when a man who has passed an examination in one State goes into another State where the law is different, he may be compelled to go before another examining board ; and the man who has been in practice for ten or fifteen years has, naturally, forgotten some of his anatomy and his physiology. Why ? Because physiology changes every two years. I have to go to my physiological man every two years and ask him, “ Is the physiology of last year right ? Is that the physiology of the present year ?

Is the analysis of the saliva the same this year as it was last year? Does it do the same?" If it does, it is a wonderful thing. The same with chemistry. You know that it is only a few years since chemistry has been turned bottom side up, and that is not a handsome thing to do. It will probably be turned back the other way in a few years. Everything under the sun is different. But if a man goes before a state board after ten years' practice, although he is a mighty sight better dentist than he ever was before,—he can fill teeth, clean teeth, extract teeth, and make teeth very much better than he could ten years before; but he can't pass that board. Think of that man who went to California for his health, after being broken down in the practice of dentistry. He went from our society to California, and he could not pass the examination of the state board out there, and he was obliged to either move out of that salubrious State, of which there is but one other its equal, and go elsewhere, or refrain from practicing at all. That is not right, either morally or professionally.

Messrs. Presidents, I have taken up a great deal too much of your time already; therefore I think I will not say anything about salaried professors and endowed schools. I wish our schools were endowed; I wish somebody would leave half a million dollars, or two or three million dollars, to endow our school. If they did, we would fix up things in better shape. But don't salary me. I would rather work for a dollar a day than have a salary of ten thousand dollars, because if I earn my dollar a day this year I will earn my thousands in the course of time; and if you give me ten thousand dollars one year, the second year I would want more, and in three years I would consider myself a poorly paid man.

Dr. L. Ashley Faught. I have been very much pleased with both of the addresses of our Presidents, and one thing particularly in the address of the Pennsylvania President is worth noting: the assertion that what was wanted in the profession of dentistry was unanimity of feeling. There is a separation, but I do not think the best basis of unanimity in the profession can be reached through the law. I believe, from my own knowledge and from my connection with the schools, that the division is due to the very thing upon which unanimity should exist,—that is, the enforcement of the law. I want to compliment my friend Dr. Jack upon what he has said here; but there are one or two things in his address with which I must disagree. I should do injustice to a large number of members of the profession if I did not try to correct an erroneous impression that has gone forth. We have been told by another professor in an educational institution that, being

cognizant of the fact that students in his department of the college obtained forty-one votes at their examination by practicing fraud, he gave them one more vote——

Dr. Flagg. I did not say so. I said we did not know it, and I asked how we could know it. Why, we think the fellow is an angel, his wings folded under his black coat.

Dr. Faught. Well, I have one other correction to make, in which I know I am right, because I have the proof here. It is the assertion that the word "may" appears in the Pennsylvania law in connection with a man appearing before the board of examiners with a diploma. The Pennsylvania law does not say anything at all about the examination, and the word "may" does not appear in the law in that connection. The word "may" occurs in the Act of 1883, in reference to the matter of recording the diploma after the state board has found that the examination is satisfactory as to the qualifications of the man; after they are satisfied of the genuineness of the diploma, then it may be recorded. We admit the weakness of the word "may"; it should be "shall."

Dr. Flagg. I said quite strongly that the schools were disposed to hold up the hands of the examining boards in the enforcement of the law, and I would like to ask the President of the Pennsylvania board to read that part of the Pennsylvania law in regard to passing men who hold diplomas. I would like to know if the spirit of the Pennsylvania law is not this: that when a man presents a diploma, and the examining board feels that he is an able man and competent, that they can register the diploma without an examination; but if they have any doubts about it, then they have the privilege of examining the man.

Dr. Faught. The examining board and the Committee on Enforcement of the Law often come into the same court in that matter, and the true spirit of the law, as interpreted by the examining board, the Committee on the Enforcement of the Law, and the Legal Committee of the Philadelphia County Dental Society, is that the state board shall in every instance examine.

Dr. Flagg. Won't you kindly read the law?

Dr. W. E. Magill. The Act of 1876 reads,—

"It shall be unlawful for any person except regularly authorized physicians and surgeons to engage in the practice of dentistry in the State of Pennsylvania, unless said person has graduated and received a diploma from the faculty of a reputable institution where this specialty is taught, and chartered under the authority of some one of the

United States, or of a foreign government, acknowledged as such, or shall have obtained a certificate from a board of examiners duly appointed and authorized by the provisions of this act to issue such certificate."

Section 2 of the same act says it shall be the duty of this board to grant certificates of ability to practice dentistry, etc. The Act of 1883, Section 2, reads as follows :

"Any person beginning to practice dentistry in this State after the passage of this act, having a dental diploma issued or purporting to have been issued by any college, university, society, or association, shall present the same to the State Examining Board provided for in the act to which this is a supplement, for approval ; such examining board being satisfied as to the qualifications of the applicant and the genuineness of the diploma, shall, without fee, indorse the same as approved, after which the same may be recorded as aforesaid."

Under that clause Dr. Faught takes the ground that the board is in duty bound, not by the letter but by the spirit of the law, to examine. The law says they shall indorse the diploma, etc., after being satisfied of the qualifications of the applicant and the genuineness of the diploma ; and the question is as to what will satisfy them. The gentleman takes the ground that they can only be satisfied by an examination.

Dr. Osmun. Professor Flagg asked the question how he could know that a student practiced fraud in preparing his specimens of work and in passing his examination ; that if he got Tom to take his impression, and got Harry to swage his plate, and Dick to set the teeth for him, and somebody else to prepare and fill a cavity for him, how was he to know it when the student came before him and laid his hand on his heart and said he did the work himself ? And he was right ; the professor could not know that ; and the student cheated himself far more than he cheated the professor. That is true ; but when we shall have salaried professors, those professors will spend their time in the college where they can overlook the students and investigate their work, and they will be able to see and know whether the students really do what they say they do.

Dr. Magill. Let me say a word about this question to our friend Dr. Flagg. I happen to be a member of the examining board, but I have not correctly understood our position until he stated it so clearly here ; I did not know that we were wet-nurses to the colleges, but since we have become their wet-nurses we will endeavor to do our part as well as possible.

Dr. Flagg. I would like to ask the doctor what he is a wet-nurse to, if it is not to the colleges?

Dr. Magill. Nothing. We have not proposed to be wet-nurses, or anything of that kind. But if I understand what the professor says, it is tantamount to that : that the examining board is to be made a wet-nurse to the college.

Dr. W. W. Walker. Mr. President and gentlemen of the combination, Dr. Luckey, in his annual address, said he thought there should be a National Board of Examiners. I think myself there should be a National Board of Examiners. There are so many different college faculties and so many different state laws that they frequently clash with each other. Recently there came under my personal observation the case of a young man lately graduated from one of the most reputable dental colleges in the United States, who moved into a State where they require an examination by the state board before one is allowed to practice. On returning to his native State, a full-fledged graduate, he passed an examination before the state examiners in great shape ; but after a while he thought he would like to practice in another State, and he went before another state board for examination, and they turned him down, saying he was the worst they ever saw. Now I claim that there should be a National Board of Examiners to act as an appellate court in such cases, so that State Boards of Examiners might be raked up occasionally when they needed it. I think it is wrong and disgraceful that a man who has been graduated from a reputable college and has passed a creditable examination before his own state board should be humiliated by compelling him to go before the examining board of another State, to be turned down in that way ; therefore I am in favor of having a National Board of Examiners who would act as an appellate court, to ascertain, in such cases, where the error has been made,—whether in the state board and the college that first examined the man, or in the state board that last examined him.

Dr. G. Carleton Brown. I would like to ask Dr. Walker why it is a humiliation for a graduate to appear before a state board for examination ?

Dr. Walker. I think, Mr. President and Dr. Brown, that where a young man who has in the first place obtained either a collegiate or a first-class grammar-school education, sufficient to enter college, then spends three years, of seven or nine months each, in a reputable dental college, and passes the examination of the faculty, that that should be sufficient proof of his proficiency and his ability to practice

dentistry throughout the United States. That is why I say it is a humiliation.

Dr. G. Carleton Brown. We acknowledge that it should be, but the fact is that they are not always qualified. I would like to talk on that point later on. Dr. Walker cites a particular case of a gentleman who was graduated at a college and went before his state board and obtained the privilege of practicing in that State, and subsequently went before another state board for the privilege of practicing in that State. That statement is not correct. The man went to that second State to procure another degree. He had the privilege of practicing there under his original diploma.

Different boards examine in different ways. The New Jersey Examining Board is composed of five members, and each candidate goes before every member personally. It is not a public examination. He spends a different length of time before the different chairs, and he receives as thorough and practical an examination as it is possible to give a man. If the man is diffident, the examiner is apt to find it out very soon, and in that case the examiner is going to do everything in his power to help on that man, if he is sure he has the knowledge. It may take twice as long to get it out of him as it would to get it out of a smarter man who might not really know half as much ; therefore a board that works on that plan is more fair to the candidate and gets at the facts as to his qualifications better than a board that sets the men up in a row to fire questions at. That is what happened in this case that has been mentioned, and the man got rattled ; three or four questions were put to him that he did not answer ; but if he had been taken alone he would have answered every one of those questions.

Why should one board be criticised for having a low standard, by another board which stands their men up in this way to knock them down if they want to ?

Dr. Walker. That is why I say we should have a National Board of Examiners, to act as an appellate court. I would like to know myself whether the fault in this case was with the board that last examined the man, or whether it was with the other one, and with the college that graduated him ; and there is now no way in which we can find that out. I am sure the board in one State is as honorable as that in another State ; but I think it is our duty to find out how such differences occur, and the only way to find out is to have a National Board of Examiners to whom such cases could be appealed.

Dr. Guilford. Mr. President, the profession are united upon one thing and not united upon another. I think the members of the

profession are united in the opinion that dental education should be improved, that the standard of dental requirements should be raised ; but they are divided upon the means by which that end should be attained. I think that all the college faculties, with few exceptions, and all the boards of examiners in the different States, and all practitioners, are agreed upon this point, that the men who enter upon the practice of dentistry to-day should be better qualified than those were who have entered it in the past. The differences exist as to how to attain that end. In trying to improve the status of dentistry, various plans have been adopted ; among others we have established from time to time, in the different States, State Boards of Examiners, and those boards have pursued different courses ; some indorse diplomas from reputable schools, while others require an examination of every applicant. In our groping in the dark, trying to get to the light, different plans have been suggested. Let us examine some of these plans.

A great deal has been said to-day, in our Presidents' addresses and by other speakers, by Dr. Walker a moment ago, about having uniform dental laws in the different States. Is that feasible? Do we have uniform laws in the different States in regard to any other matter? Have we uniform laws in regard to insolvency, marriage and divorce, or in regard to rates of interest? Not at all. The national government has never yet passed a law of that kind that would be approved as just and equal in the different States. It seems that there are certain questions that must be decided by the States themselves, and this is probably one of them. In regard to a National Board of Examiners, they would have to be appointed by the general government, and I do not think the general government at Washington could pass a law which requires the appointment of examiners from the different States, and in any case it would be impracticable for such a body of men to undertake the examination of twelve hundred graduates or more in a year. Who could give the necessary time to it, and who would pay them for their time? It is apparent upon the face of it that it would not be practicable. We could not do it, because there are certain things that must be left to the States themselves to regulate, and because we could not find men who would be willing to do the duty. The only thing to be done is to allow each State to pass its own laws, and to enforce those laws as it sees fit ; and as long as that condition of things continues we must necessarily have a variety of laws.

On motion, the subject was passed.

Dr. Kirk made an announcement in relation to the excursion to Altoona on Saturday.

President Jack, of the Pennsylvania Society, announced that the Joint Executive Committee of the two societies would have a meeting at 3 o'clock.

Dr. Kratzer, Secretary of the Pennsylvania Society, read a report of the Board of Censors of that Society. The report was accepted. Adjourned to 8 o'clock P.M.

THURSDAY EVENING SESSION, JULY 21.

President Louis Jack. Gentlemen, the first proceeding will be the reading of a paper on dental education by Dr. G. Carleton Brown, of Elizabeth, New Jersey.

Paper read by Dr. Brown ; subject,—

DENTAL EDUCATION.

MR. PRESIDENT AND GENTLEMEN :

As the title chosen for this paper seems rather too broad for my present purpose, I ask to qualify it by substituting "Dental Education as Viewed from the Standpoint of the Dental Examiner."

I do not propose to take up your time by going over the old ground which you all know so well, of how and when the first dental college was formed, and how from it were speedily evolved the other colleges ; nor do I propose to touch upon the growth of the state and local societies, nor to review the development of the profession of dentistry and its educational evolution. Our object at this time is to look at things as we find them to-day, and discuss the possibilities of the future as foreshadowed by our present environment. I am sure all who are gathered here this evening are loyal to the profession of their choice, having the one paramount object in view of the advancement of that profession through the process of education.

This education should be divided into two classes,—the preliminary education of the student, and the subsequent and continuous education of the practitioner. We will consider first the education of the student. Throughout this country there are scattered at the present time thirty-seven dental colleges, or educational institutions, in which a dental education is given, or advertised to be given, for a certain stipulated sum. The student has a large and attractive list from which to choose his *alma mater*. He can receive his dental education in an institution with two dentists on the faculty, the rest being medical practitioners or lecturers, or he can reverse this order and have only two medical men and the rest dentists ; but not yet can he find a faculty

composed entirely of dentists. By some this is supposed to have its advantages. It has been stated that dentists are not as well qualified for teachers in some branches as are medical men. I doubt this, and hold that we have men in our ranks fully qualified to teach any branch which it is essential for the colleges to teach. If not, the question naturally arises, Has there been something defective in our education in the past, so that our own men are not now fitted for the position of instructors? I think there is no question but that any subject in the curriculum can be presented to dental students in a more practical way by a well-posted and well-educated dentist than by a medical practitioner. It is certainly not creditable to us as a profession that a remark can be made such as we often hear, to the effect that the dental profession is obliged to go to the medical for a large number of its teachers. We should give no ground for such a statement. As long as this can be said, there seems to be room somewhere for improvement in our educational methods.

Let us note a few practical points which may help us to understand the situation. After looking through the list of the faculty and examining the prices for board, the "inquiring student" naturally looks at the list of students and graduates, and that college showing the longest list and the smallest percentage of failures in graduates is very apt to strike him as being the best place for him to select.

It is in the apparently sensible reason which influences his choice that we find the real cause of the lowering of the standard of dental education which became manifest a few years ago.

Certain educational institutions at one time granted diplomas to men who were by no means qualified to practice dentistry. These institutions granted their diplomas not one or two at a time, but in large numbers, thus increasing their graduating classes, making a showy advertisement, and incidentally bringing in large profits to the proprietors of the mill.

As another method of increasing the size of these lists, certain colleges have resorted to trickery of the worst kind; one of these methods being to actually duplicate their classes. This was done in several ways, the most common being to examine a man, pass him, have him on the platform at the commencement, and confer the degree of D.D.S. upon him, then withhold his diploma because he was not of age (granting him, however, a certificate of graduation); then at the next commencement—if the young man had been fortunate enough to attain his majority in the meanwhile—they would have him up again, confer the degree, and let him have his diploma,

but by this operation they had increased their list and made so much bigger a showing.

But still worse than this was the regular repeating tactics practiced, by which a number of men were graduated, had their degrees conferred and diplomas granted, and then, without any excuse whatever, were put through the same performance again the next year.

All this, however, is now, I trust, a thing of the past. Thanks to the efforts of the profession at large, but more especially to the National Association of Dental Faculties and the National Board of Dental Examiners,—all honor be to them for their noble work,—we are rapidly recovering our lost ground. But let especial honor be given to those States and State Dental Societies which advocated and caused to be passed by their legislatures stringent dental laws *requiring* a student to attain to a certain standard before he could practice in those States. To them belongs the main credit for the preservation of the good name of our profession, which was being imperiled by the avariciousness and greed of a few.

A member of the New Jersey Dental Society told me in October last that the subject of dental education, and more particularly the workings of the New Jersey dental law, was brought up at the joint session of our societies last July, and that not one person would say a word for it. I was not at that meeting; but on general principles I told that man that he, well—I told him the truth; just the same as any of you would have done if you had known that four members of the New Jersey Examining Board were there, and only too ready and willing to answer all questions on the workings of the New Jersey law. Therefore, to speak plainly, he must have lied.

This is the only incident of an unpleasant nature which I have had with any member of the profession since the enactment of the law of 1890. Although I have had a great many arguments and differences of opinion with men who considered themselves unjustly dealt with, in every other case only the friendliest feelings have followed, and I believe every one of those men is now a firm believer in and supporter of the law. I simply mention this to show how the matter is viewed by those most affected.

As to the way this law has been received by the students who have come before us, I wish time permitted me to repeat many of the pleasant conversations I have had with them; suffice it to say, that they stand a solid body in favor of restrictive laws, not only the men who have passed, but a number who have failed, having expressed themselves as being convinced that the law was just and right. One

young graduate came before the board with assurance enough to carry everything before him ; he had just graduated from a recognized college with honors, and knew it all. Examination boards, he explained to me, were a farce ; the idea of a lot of dentists setting themselves up to question a man who had just graduated ! Before the day was over he had changed his tune a little, and before going home he came to me and said that he didn't believe he was so "darned smart" as he thought he was, and that he was afraid he would be plucked ; but that if he was he would "brace up and come again." Things turned out as he had expected, and in three months we had the pleasure of examining him again ; and it *was* a pleasure. Such a marked improvement in so short a time was wonderful. After the examinations were over, he came to me again and said that he felt better and was in hopes he would get through. He also said he wished to express his gratitude to the board for their kindness, and that he considered that his failure at the first examination was the luckiest thing that ever happened to him ; that it had taught him how little he really knew, and how unfit he was to go into practice ; that he had worked hard and continuously since that time, and had succeeded in learning that he had only commenced his education instead of having finished it as he had supposed. The examination fee he considered the best investment he had ever made.

At this time a short synopsis of the workings of our law may be of interest. But before giving this it will be necessary to glance at the previous laws and the necessity for that of 1890. On March 14, 1873, the first dental law was enacted in New Jersey, which made it unlawful for any person to engage in the practice of dentistry in the State unless said person had graduated and received a diploma from the faculty of a dental college, or had obtained a certificate from a board of dentists duly authorized and appointed by this act to issue such certificates ; the act further provided for a fine for all infractions of the law. In February, 1880, a supplement was passed to the act, requiring registration with county clerks. In 1884 an act was passed doing away with the examining board, and allowing only diplomas from dental colleges to be registered. These laws, while apparently good, were defective in a most important feature,—viz., the power to enforce them. They were practically a dead letter, and New Jersey was fast becoming a dumping-ground for her big sister States ; but fortunately one of the great products of New Jersey is hornets, and, thanks to their buzzing and stinging, we are a dumping-ground no longer. The profession, realizing the danger in which it was being

placed by the influx of so many incompetent and poorly educated D.D.S.'s, appealed to the legislature for the protection of the people, who in all cases of this kind are the sufferers.

The legislature, seeing the right and justice of this appeal, passed a law which stands at the head of dental protective measures. They passed it in spite of a strong influence brought to bear from different sources, and, strangely enough, from the two extremes, or what should be the two extremes, of the profession,—the charlatan and the college. The Governor, after carefully examining the bill and hearing all sides, gave it his hearty indorsement and signature. This measure so impressed the medical profession that they drew up and had passed a bill of the same kind and on the same general lines. The Governor promptly appointed the two Commissions, and they have both worked carefully and conscientiously and in full sympathy with each other for the benefit of their respective professions and the people at large.

After the appointment and organization of the Commission, the Secretary was instructed to see that every dental practitioner in the State was properly registered. This proved to be an exceedingly arduous undertaking, as the records of the county clerks' offices had to be searched and a great many technical points settled. It was found that a large number of reputable practitioners were practicing illegally; these, of course, could not be registered, and had to come before the board for examination. However, they were soon disposed of, and the board settled down to the main work for which it was appointed. This work gave to the members a most interesting and instructive opportunity to study the educational results attained by the different colleges. A very low standard indeed was found to exist in certain directions, which proved beyond all question the assertion made a few minutes back,—that at that time some colleges were turning out every year a large quantity of incompetent men. As time went on there was a marked improvement in the men who came to us from these same colleges; we found that they were much better prepared and equipped for their life's work.

The following list of applicants for license who were examined between July 14, 1890, and April 19, 1892, will show the decrease in the percentage of failures, practitioners who were caught on a technicality being omitted :

July 14, 1890.	Passed, 4;	failed, 1.			
October 21, 1890.	" 4;	" 5;	passed on re-examination, 1.		
January 20, 1891.	" 2;	" 1;	" " 1.		
		failed	" 2.		

April 21, 1891.	Passed, 6 ;	failed, 5 ;	passed on re-examination, 1.
		failed	" 2.
July 13, 1891.	" 2 ;	" 1 ;	passed " 1.
		failed	" 4.
October 20, 1891.	" 3 ;	passed	" 2.
		failed	" 1.
January 19, 1892.	" 2 ;	"	" 1.
April 19, 1892.	" 11 ;	failed, 4.	

At the last examination you will notice a decided improvement, there being only four failures out of fifteen candidates, and these all new applicants. In comparison with the regular fifty per cent. of failures which occurred during the first year and a half of our work, this is most gratifying, and goes far to prove that the men, at least those who are sent to New Jersey, are given better educational advantages than formerly. In fact, I have been told by students that it was a current saying in certain colleges that the men who announced that they intended to locate in New Jersey would have to pass a pretty stiff examination, as the faculty did not wish their graduates to be plucked by our board. Could anything speak more strongly in favor of our law as a compulsory educational measure?

One objection which has been raised to the law is the examination fee. As a rule, students when they leave college are not rolling in wealth, and twenty-five dollars seems a pretty good sum for them to have to pay out for a State examination ; but the necessary expenses have to be met in some way, and at the present time a tax on the applicants seems to be the only way in which it can be done. I hope at some time the legislatures of the different States will consider this matter of sufficient importance to make the examinations free, and pay the expenses of the Commissions from the State treasuries.

Another apparent injustice is that a licensed practitioner in one State will be required to pass another examination if he wishes to practice in another State. This will in time undoubtedly regulate itself. After a sufficient number of States have enacted similar laws, a standard of requirements can be adopted and licenses made transferable, so that a man having once passed his examination can practice in any State where the requirements of education are co-equal. The appointment by the state or local governments of a board of examiners to conduct the examinations in the colleges, instead of the teachers of those institutions being the examiners, would answer the same purpose. One of these two measures will probably be the outcome of the present agitation. Seconding the efforts of the profession to further these educational measures will be found all those truly pro-

gressive institutions which have at heart the elevation of the professional standard, rather than the mere accumulation of dollars.

Let us now suppose the student safely launched on his professional career. If he is progressive (which he is much more apt to be after going before a state board), he will immediately join his state society, and, if he is fortunate enough to have one within reach, a local society. Here we have the great practical educators, surpassing even the journals. A student's college course is but the introduction; the societies give him a post-graduate course. Through discussions, through interchange of ideas and comparison of methods, they give him opportunities of learning which can be attained in no other way. The rapid growth of scientific dentistry can be directly traced to the influence of these societies. Therefore they should be fostered and encouraged.

At the annual meetings we are generally favored by practical demonstrations in the shape of clinics; these are very well in their way, but they do not extend far enough. It is seldom that we have any chance of seeing the fine and delicate work of the oral surgeon, and indeed it is scarcely possible to perform delicate operations at a clinic of this kind, or in fact in any other place than a hospital. I would therefore offer the following suggestion: In nearly every city and town of any size there is a hospital, with a surgical and medical staff, and generally an oral surgeon or dentist, but the duties of the latter are often perfunctory, and not what they could be made. I would therefore suggest that the dentists offer their services to these hospitals as a regular dental staff, and have regular dispensary days or hours, which they could apportion between them in such a way that no one could be specially burdened. In this way a large amount of good could be done for the poorer classes, and at the same time a large amount of useful information could be gained by the practitioner, and many interesting cases examined and treated which would not otherwise come under his observation.

Trusting that I have been able to place this matter in a more favorable light to some of you, and perhaps offered a new thought or two, I leave the matter for your consideration.

President Jack. The next proceeding will be the opening of the discussion of this paper by Prof. Charles J. Essig, of Philadelphia.

DISCUSSION.

Dr. Charles J. Essig. Mr. President, a large portion of the paper we have just listened to seems to be a plea for the New Jersey State

Dental Examining Board, and that portion of it which refers to dental education is so ambiguous that I do not care to take up the few points that are in it. I know very little about the New Jersey State Examining Board, and I would much prefer to discuss the subject from the broader standpoint of dental education. I am very far from believing that examining boards, in their present heterogeneous condition, will accomplish much permanent good. Some of these boards examine candidates who have not received systematic instruction, and who have no diplomas. Very little is to be said of such boards, but I think they have undoubtedly done a great deal of harm. In some States the examining boards are required by law to examine candidates, both with and without diplomas, and may reject the graduate or confer their certificate upon the untaught candidate. I would like to ask you whether you honestly think the standard of dental education can be raised by such state examining boards?

But some of you may say, 'The examining board of our State examine only graduates of dental colleges.' No one can question the right of the State to pass such a law, and if the members of such boards are properly qualified and do their work thoroughly and conscientiously, much good might be accomplished. But the matter of passing upon the acquirements of men who have already been examined, pronounced qualified, and recommended by their teachers for the degree, is too important to be decided by an informal, verbal examination without witnesses, which leaves the poor candidate who has spent his time and money at college at the mercy of a man perhaps in every way his inferior.

Examining boards are not unlike dental faculties in their organization; and it seems to me that they are open to a larger extent than the college faculties to the same criticisms that we have heard here against the colleges. Personally I should be very glad to be entirely relieved of the task of examining men. And I should be very glad if there were a uniform law in the different States, and if there was some way by which we could be sure of the qualifications of the examiners in those uniform boards; but I think that is altogether hypothetical; I do not believe it is possible to get that uniform condition of things, so that there will be the same standard in all the state boards. The only way would be to have a national board, and that is quite out of the question. I wish we could have something of that kind.

The candidate for examination, if he holds a diploma from a reputable dental college, has rights which ought to be and probably eventually will be respected. He is entitled to know whether his examiner

is qualified to examine. I maintain that it requires just as high a degree of knowledge to examine candidates as it does to teach them.

I believe there is not a dental school in the United States that would not prefer to have all its chairs filled with dentists ; and yet there is probably not a school in America where that is the case. In the very few exceptional instances where the chairs of anatomy and physiology are filled by dentists, you will find that the dental education of those gentlemen has been supplemented by a medical education and constant application to the subject. Physiology and chemistry are experimental sciences, and require constant revision.

The incumbents of the chairs of physiology and chemistry in the University of Pennsylvania are not practitioners, and the college will not allow them to be, but requires them to give their entire time to their daily work.

A man should be as well prepared to examine men as to teach them, and I do not think the examining boards possess such qualifications. When they do, they can take those men from the colleges. We probably have with us to-night a gentleman who fills the chair of physiology in one of our dental colleges, and I think he will tell you that it took a great deal of time to prepare himself for that position. It needs extensive preparation, and should have extensive compensation.

The present method of examining by state boards is as arbitrary as it is slipshod and superficial, and will give rise to no end of controversy and trouble, and in the end will defeat its own object. It will not be long before it becomes apparent to all who are interested in this phase of dental education that such examinations should be written ; questions and answers should be in writing, and be placed on record for reference when occasion requires. The question should be in the handwriting of the examiner, and the answer in that of the candidate.

One of the most absurd positions of the advocates of examining boards is the position that they can do what the colleges cannot do : that they can examine men and pass upon their qualifications, while the colleges cannot do so. It may seem a fine thing to the members of some of these examining boards to be in a position to pass upon the acquirements of graduates of colleges, and to criticise the work of college faculties, but they are losing sight of the great work that these schools have accomplished. They have done more for you than you have done for them ; and if the shortcomings of some of them have furnished the excuse for your existence, the dental colleges are alone entitled to all the credit for the high position which the dental

profession occupies at the present day. The most important improvement in the system of dental education, the lengthening of the terms, was made compulsory by the National Board of Dental Faculties, a body composed of delegates from the faculties of all the colleges in the country. There are, perhaps, some disreputable colleges,—in what branch of human activity is there not something disreputable?—but the National Board of Dental Faculties can take care of them.

The essayist does not appreciate the importance of the work of the teacher. I think that is clearly shown in his remark that any subject in the curriculum can be presented to dental students in a more practical way by well-posted and well-educated dentists than by a medical practitioner. There is a very attractive sentiment embodied in that idea of having the entire faculty of a dental school composed of dentists; but take the branches of chemistry, anatomy, and physiology,—can these positions be filled with dentists? No. How many of your dental examiners are really competent to examine in these branches? A man cannot take up the study of chemistry successfully in a year, and the same is true of anatomy. He cannot learn anatomy from books; he cannot take Gray's Anatomy and read it over at night and make himself proficient in that branch. You must study anatomy from the cadaver, and that takes a long time. One of the leading professors in the chair of anatomy in a dental college has stated that after he graduated in dentistry he spent seven years in the study of anatomy.

Has there been something defective in our system of education in the past? Of course there has. The term has been and is too short for the student to acquire anything more than a smattering of these subjects. Go back a few years; our colleges had two courses of four months each. Now, does any one for a moment suppose that we could make men proficient in mechanical and operative dentistry, anatomy, physiology, chemistry, and therapeutics in eight months? A child would know better.

Criticise the present system of dental education as much as you like. I criticise it myself freely, but I do not like to hear it criticised by outsiders who are ignorant of its history and traditions, and who are without the pride in its practical achievements which daily contact with it inspires. I do not think the dental colleges object to criticism. What they do not enjoy is the annual growl, the ambiguous growl that is heard.

Thoughtful, earnest dentists, who have no disappointed ambitions to prejudice their views, who have only the welfare and advancement of their profession at heart, have a right to criticise; but such men

offer advice and make suggestions in an earnest and kindly spirit, which gives force to what they say, and is always encouraging to those who are engaged in dental teaching, and such men never drag ambiguous criticism into public discussions ; if they see a fault, they point it out and give it a name. None of you who criticise the present system offers a better one, and none of you offers to start and endow a school.

The great fault in the system of dental education in the past has been want of thoroughness. Unfortunately, the first dental school was organized on the general plan of the medical colleges. The art of medicine is largely theoretical and uncertain ; the art of dentistry is essentially practical and precise ; hence a system depending upon the ordinary didactic and clinical teaching, as practiced in purely medical schools, can hardly be expected to furnish that wide range of manipulative ability which practical dentistry demands, and which can be acquired only by repeated effort. The higher branches of mechanical dentistry have almost become a lost art. This is largely due to the fact that a term of three or four years' preliminary laboratory instruction is not now demanded as an entrance qualification by the colleges ; they have assumed that part of the student's training by offering him as an equivalent the unsystematic spring and fall courses, so-called. This was and is a snare and a delusion, and the time has arrived when the colleges must supply the necessary training in the practical branches.

I feel very hopeful for the future of dental education. The colleges have extended their term of instruction to three courses. The purely theoretical branches are already well provided for, but the chief value of the increase in time will be found in the greater opportunity for practice in the dental laboratory and the operating-room ; but to get any material advantage from the opportunity thus offered, the work must be graded and compulsory. We do assign certain studies to certain years, but we do not grade the work ; and until we do, as long as we follow the old lines laid down by Harris at the organization of the first dental college, and the rules of the old medical schools of fifty years ago, so long will our work lack completeness. The so-called demonstrators must become teachers and important factors in the training of the student. Operative and laboratory work of a simple character should be assigned the student in the first year, together with chemistry, materia medica, and therapeutics, and a standard should be fixed which he should be compelled to reach.

We have followed the system of the medical schools of fifty years

ago, and it should be changed. There has been a disposition shown within the last ten years to improve the system and advance the standard.

But there is a commercial side to this question. The gentlemen who want to antagonize the schools and teachers ought to look on both sides of the subject, and see that there is a financial side. The examining board have found that out. My idea would be to lengthen the term, to give the student five years, if possible; and I would take the student at seventeen years of age and put him at simple things, teach him the little things, and gradually carry him forward, and five years would not be too much. It is a fault of the system that it goes immediately to the teaching of physiology and anatomy. That is perfectly absurd. But I do believe the time will come when the term will become so materially lengthened that the examining boards will find their occupation gone.

There is not one school in the United States that is independent entirely of its students. Suppose I carry out my hobby of having five years' instruction and teaching thoroughly: how many students do you think we would have? I recollect very well that when the University of Pennsylvania adopted a preliminary examination the previous year's class had been a large one, and the moment it was announced that an examination would be exacted the size of the class was diminished. If we were to adopt a four-year term, I think that by the time the year was up we would find that we had comparatively few students.

There are many points in the paper that I might reply to. I would like to call your attention to one point, and the rest I will leave for some one else. The essayist deplores the existence of fees of the examining boards. I have always thought that the fees of the examining boards were not only very objectionable, but unquestionably wrong. The examining board assumes a censorious position, and ought to be, like Cæsar's wife, above suspicion; but as long as they have thirty-dollar fees they are just like the dental colleges. Nothing can be said about it. You can assume anything you choose, you can be as ambiguous as you like about it, as ambiguous as you have been about the dental colleges, and as long as you retain that fee you will be open to criticism.

Something has been said about the colleges making money, and Professor Flagg answers that charge; but there is one point that he did not touch upon. Do you know that the dental examining boards are very high-priced institutions? The dental colleges cannot come

near them in the matter of compensation. You charge twenty-five dollars in the New Jersey State Examining Board for an hour and a half or two hours' work,—two or three hours, more or less ; while the colleges for twenty-five dollars give the student, in round numbers, it may be more, seventy-five lectures and several laboratory instructions. The examining boards are well paid, but neither of us is working for nothing. I have always thought that it was wrong to exact a fee from a candidate before the examining board. When I was a member of the examining board of the State of Pennsylvania, a sum of money was placed in my hands at the end of the session, and I was told that that was my share. I do not know what you gentlemen of the state examining board do with the money you collect, but I do know what I did at that time ; I did not think I could take that money, and I handed it back. My only object in referring to the matter here is to try to show some of the gentlemen who make charges against the dental colleges that there are two sides to the question.

Dr. F. T. Van Woert, Brooklyn, N. Y. Mr. President and gentlemen, I had no purpose of touching upon the question of state boards ; still, I do feel that it would be better if there were less said against the colleges. I have ignored, or rather passed over, that point without comment or criticism. I come from a State where we have a state board, and I think a great deal of it ; but I feel that the colleges have been criticised too much, and that they have done too much good to deserve it.

It is not my purpose to consume valuable time in preliminary remarks, but to enter at once upon the discussion of the paper. Therefore I beg to call your attention to the following points.

The essayist divides dental education into two classes, namely, the preliminary education of the student, and the subsequent and continuous education of the practitioner.

Considering the first, he says the student, in choosing his *alma mater*, is confronted with the fact that some institutions have in their faculty but two doctors of dental surgery, the balance from the medical profession, or the reverse, and not one of the large number of dental schools can boast of a faculty composed entirely of members from our own ranks, and wonders if some defect in past education is not to blame for the same. I should say, Yes. Why ? Because dentistry embodies so many of the sciences that it is impossible for the average practitioner to take up a specialty, such as anatomy, physiology, histology, chemistry, etc., without encroaching seriously upon his office hours and his monthly balance in bank ; hence the dental

colleges are compelled to look to the medical profession for many teachers in these branches, they of necessity being more proficient in these sciences, having to use them in their daily practice to a greater extent than we.

I cannot understand why we should deplore this state of affairs. The object in view is to get good teachers, and give to the student a proper education for his career as a doctor of dental surgery. The question of how, where, and the time consumed, are of secondary consideration. The vital point is, Has the student the requisite qualifications to fit him for his life's work?

In reference to some educational institutions in the past granting diplomas to those who were by no means qualified to practice, it was true to a degree ; still, we should remember that colleges, like individuals, seldom if ever attain to their ideal.

Who among us cannot look back at the close of the day, and feel that if that which is past could return we would be able to greatly improve on the work just done? The gentlemen engaged in the education of our students undoubtedly regret their mistakes. The labors of the National Association of Dental Faculties and the National Board of Dental Examiners, together with the efforts put forth for a higher standard by the various dental societies, have emphasized the fact.

The question of dental education is one that has many sides to it. We all recognize the fact that a dentist should possess a scholastic training, that he should have a knowledge of this body of ours ; how the laws of health are maintained, how diseases are met and controlled. He should be acquainted with the facts of histology, chemistry, and the like ; but, after all, the corner-stone of dental education is the laws of mechanics. This, gentlemen, is the key of the arch. Without mechanics, where would dentistry be to-day?

It is upon this science that our profession is built,—a profession that in time will lead all others ; and I feel that if our dental schools were to introduce a more thorough course of instruction in the various branches of mechanics, we would see the standard raised beyond our expectations.

The fact that nearly every operation which we are called upon to perform is principally mechanical behooves us to take with us, in our advancement, the parent science, and restore it to its former prominence in the family.

Don't misunderstand me. I do not want to see the least lagging in other directions, but am pleading for the reinstatement of an old and essential art, which has been so neglected for some time past.

In all that has been said at this and the morning session of these societies upon dental education, not a word has been said for the art of mechanics. I could occupy an hour in pleading for this essential part of dental education, but I feel, owing to the lateness of the hour and the many other features of the paper, which I will leave for others to discuss, that I had better close my remarks.

President Jack. The next proceeding will be the reading of a paper by Dr. W. E. Magill, of Erie; subject, "Dental Law and Dental Education."

Dr. C. S. Beck. I would like, if it is in order, to ask the President of the Pennsylvania State Dental Examiners to tell the gentlemen present, in order that they may have a correct idea of the work of the Pennsylvania State Board, the amount of fees that board has received, the amount of labor it has performed, and the number of men it has passed in the last five years. I think he can do it in a very few moments.

Dr. Magill. I suppose it would be only necessary to state briefly that the Pennsylvania State Examining Board receives no remuneration. It has been its practice for the last few years to turn over all money received to the state society. There was a time when the members felt authorized by the terms of the law to pay their traveling expenses simply, not their hotel bills, out of the fees they received, but for some years they have not personally received any fees or salaries. They pay their own expenses.

DENTAL LAW AND DENTAL EDUCATION.

As members of our profession we are all interested in dental law and dental education: in law as a check upon vice, a restraint put upon charlatanism; in education as a beneficent uplifting force, urging toward higher standards and better attainments.

We do not value law as a direct educational force, but indirectly it has proved an agent of value and power. Indeed, the enactment of law presupposes education somewhere,—a comprehension of apparent wants to be filled, or evils to be remedied, or wrongs to be righted. As a fact, dental education came before dental legislation, inasmuch as the college and the association both antedate the law.

Law is the result of discovered needs, the evidence of a desire to change the existing order of things. Especially is this true of dental law. For many years we were contented and comfortable without legislation, unconscious of any benefits to be derived from that direc-

tion ; and it may be interesting to inquire whence came the innovating impulse to disturb this placidity of professional life. I think it may be traced to the influence of college education. Conscious of the benefits derived from enlarged opportunities, generous men desired to elevate the profession by establishing higher standards. Some, no doubt, labored for the public good, desiring to protect the community, so far as it is possible by legislation, against the evils of ignorance and quackery.

It may be true elsewhere, and I apprehend it is true in every State, as it is here in Pennsylvania, that all movements in favor of dental legislation have originated within the profession. While the ultimate and important effect of legislation is to guard well the interests of the people outside of the profession, not from them has come the demand for laws to regulate practice, with a view to improved and more efficient professional knowledge. Indeed, there has been a disposition to gather with local pride around the uneducated and defend them, as if any law to compel education was an interference with inherent rights of "life, liberty, and the pursuit of happiness."

But the most active opposition to the enactment of restraining law has come from conservatism within our profession,—from men established in practice under the old order of affairs, and who feared or disliked innovation, lest in some way it might unfavorably affect themselves. To disarm and conciliate this adverse influence, in all the earlier laws it was necessary to demand less and be satisfied with less than was desirable on the part of those who asked for legislation, and who obtained what they could, trusting to the future for better laws when experience should have proved the benefit to be expected from them. Bearing this in mind, you will be lenient in criticism of those laws first enacted, for they were the first steps cut in the face of a high rock of prejudice, beyond which our professional life has expanded, and now we stand with a wider horizon and more glorious prospect, union in our ranks and professional jealousy banished, we hope, forever.

One of the beneficent effects of law in a State is to compel legislation in adjoining States. In Pennsylvania we were not fully conscious of the value of law until this became the dumping-ground for those incapables who were by legal enactments thrown out of other States.

In July, 1868, the Susquehanna Dental Association, then in session at Scranton, passed the following resolution :

"Resolved, That, in view of the legislation obtained in several other States, this Association will most heartily co-operate with other Dental Associations

in any effort that may be made with a view to securing legislative action which shall define the qualifications of practitioners of dentistry in this commonwealth."

In November of that year a call was published in the *Dental Cosmos* for a State Dental Convention, to be held in Philadelphia, December 8, 1868, "for the purpose of forming a *State Dental Society*." This organization was urged with the express view to secure "legislative action to regulate the practice of dentistry within the State."

It is thus shown that the very foundation of our associated life as a state society is the desire to have clearly defined, by statute, what should properly be required in the way of preparation and acquirement of the men who proposed to enter this respectable profession, which had proved its value and importance to the health and comfort of the people.

Eight years of effort were required to secure the desired enactment, which became a law in April, 1876. The Pennsylvania State Dental Society, true to the object of its organization, was earnest in effort to secure legislation, and has been diligent to obtain enforcement of the law, which is one of the simplest and least elaborate to be found in the statute-books of the States. It is not perfect; it is lacking in definition of what shall constitute practice; it does not assign to any public officer the duty of prosecuting offenders; nor does it provide a fund to meet necessary expenses to be incurred in enforcement. Under its provisions satisfactory work has only been done where a local society, operating within a given district, has raised money and energetically undertaken the prosecution of those who were in unlawful practice. Notably in Pittsburg the value and soundness of the law has been proved, and in other portions of the State a few decisions by judges have so sustained the law that now no doubt exists of our ability to enforce its provisions, provided we have sufficient testimony to offer and money to pay expenses.

An amendment secured in 1883 requires the registration of all dentists, either by diploma, certificate of State Examining Board, or affidavit setting forth the time and place of continuous practice.

The public sentiment which sustains a law is of more value than the law, for without the support of such sentiment the law is worthless. Serious difficulty was found in early attempts to enforce the law, on account of existing prejudice on the part of judge and jury, who considered its requirements arbitrary and unjust. Probably time has removed such prejudice, and advanced legislation, if secured, would receive cordial support. We found, when legislation was first

attempted, no public demand, but yet, on the part of intelligent citizens, ability to appreciate the benefits and sympathy with the objects when presented.

I cannot speak with authority of the effect of legislation upon the profession in other States, but here the influence in the direction of education has been distinct and beneficial. Men who had already commenced practice with no preparation but a brief pupilage were induced to attend college and graduate. Young men came before the examining board and, failing to pass examination, returned home to study and prepare for college. The number of those who have applied to the board for certificates has decreased year by year, until now the apparent understanding is that the man who desires to enter practice must attend college. This is due to steady advance in the requirements of the examining board, and to progressive opinion in and out of the profession.

In these days we hear and read much in regard to dental law and dental education. There is an evident feeling of unrest, an agitation for something to be desired but not yet attained. And yet nearly every State has its law, and we might almost say its college. Certainly there never was a time when opportunities were so numerous to obtain what is called education in institutions proposing to teach students in dentistry.

In certain places much fault is found with the result of college education, and the demand is for fewer schools, more thoroughness in methods, and less strife for the longest list of matriculants. While admitting that there may be good grounds for such a demand, to me it seems more important that the *character* of matriculants and graduates should be carefully considered. As a rule, the *honest* man will be faithful in what he does to the extent of his ability, and the inevitable result of such faithfulness is improvement, advancement. The dishonest practitioner is an uncertain quantity, whatever his attainments, and with him careful operations depend upon mere whim or fancy for a patient, or opportunity to deceive. I do not feel much inclined to find fault with the man who thinks he is too poor to attend college, but obtains all the knowledge within his reach and faithfully does his best for his patients ; but I am disposed to censure severely the man who receives a diploma from a respectable college and then trails it in the mire of disreputable methods, by which he expects to draw to himself business which in the proper order of things should go to another and better man. These so-called educated men, without correct principles, are the bane of professional life and character to-day. Having

complied with the letter of the law and obtained a diploma, the man of this stamp is safe, as regards the law, in his disreputable methods, and taints the professional atmosphere with an odor which no disinfectant yet discovered can neutralize. Of course the modest man, who has high regard for the character and reputation of his profession, is at a disadvantage when these men who adopt the rôle of charlatan come between him and the public, waving their banners bearing cuts of artificial teeth, hanging out the immense gilded imitation of an upper first molar, and reciting tales of wonderful exploits in remedying defects, real or imaginary. Unfortunately for the good man, a large portion of the community upon which he depends for support consists of those who judge superficially, or are easily deceived by large pretensions, or have had small experience in the world. While he has a following that is satisfactory in quality, it may not be so in quantity.

The truth is that one of our serious wants as a profession is education among the people, who can demand and obtain what they need whenever competent to judge, but will continue to be imposed upon so long as they lack knowledge of what constitutes professional ability and shrewdness in comprehending character. Looking back over the road by which experience has led us, I feel assured that one of our mistakes has been to overlook the value of the daily press. We might have made the people familiar with the terms and objects of our law, and by showing them their real interest in the enforcement of law made of them earnest friends.

Possibly we should demand and expect the college to stand between the public and the unworthy student; but to do this effectually, in many cases, the college must have the right to revoke or recall its diploma. We may not yet be ready for this advance in legislation; but the necessity for some such safeguard is already admitted, and, the evil being known, we may safely depend upon the wisdom of our profession and popular enlightenment yet to come to work a reform.

We readily concede to the college the paramount influence in dental education to-day; but those whose professional experience dates back many years can remember a time when as an educational force the association was greater than the college. Indeed, it may be questioned if even now laurels should not be divided. The direct influence of the college is limited to three years, whereas the association continues to shed light and influence during all the years of one's professional life. It is a school where experience teaches and discussion draws out truth, and many opinions converge upon a given subject.

As a society, we have not undertaken the task of education, but by giving active support to the law we have contributed largely to the success of colleges. In return, we are indebted to these institutions for the cultivated men their ranks have furnished, and for valuable contributions in all departments of professional knowledge. To the colleges we have a right to look for all that is valuable in progress and grand in principle. Our disposition is not to repress or discourage those who are doing a good work, as some surely are. We would rather unfurl a banner inscribed "Excelsior!" and, pointing to the legend, bid them Godspeed in the upward way.

As to legislation which shall require in every State the examination, by boards appointed for the purpose, of all who propose to begin the practice of dentistry, we see a drift of sentiment in that direction, but hope for such prompt and thorough action on the part of colleges as shall forestall the movement and render it unnecessary. It is a wretched stigma to attach to our American institutions that their diplomas are of no value as evidence of preparation for practice. There is no necessity for any college to continue long under such a ban, and each should strive to be the first to prove to the profession and the world its determination to be free hereafter from even a suspicion of such incompetency as is charged.

As pertinent to the subject, let me quote from a recent article on preparatory schools: "What, under the existing state of things, may be justly demanded? It is evident that there are many things, in themselves eminently desirable, that must not be expected nor even asked for. The school cannot create brains. A certain per cent. of students never ought to attempt preparation for college, and are yet always to be looked for in preparatory classes, so long as fond parents have their being. Even here the school can render a great service to the whole student body by shutting such incapables out of their higher classes through a system of rigid examinations, thus practically preventing them from ever reaching college halls."

This indicates a remedy within reach of every college. The lengthened term gives each institution what is equivalent to a preparatory school in its first year, and beyond that year no student should be permitted to go who has not shown himself fully up to all the standards as to character, skill, and intellect.

That there are serious defects in the present system of education pursued in some colleges we are obliged to admit. Every one who has much experience in employing young men recently graduated is forced to the conclusion that somewhere a fault exists which should be

remedied. Whence shall the remedy come? Unquestionably it *should* come from the college. What hinders such reform? The commercial spirit, which has too great preponderance in the origin and conduct of schools. How can this spirit be regulated or placed under control? By concentrating the influence of the profession upon this subject and in favor of reform, possibly by bringing the powers of the state to bear in exercising strict supervision of colleges, and making them accountable; also in such a system of restrictions and guarantees that dental schools cannot be, as now, started like the corner grocery, anywhere and by anybody. One of the surprising facts of this present time is the readiness with which the state gives to irresponsible persons the right to open schools.

We have seen that for dental laws now in existence our profession is mainly responsible, and the number is increasing rapidly. We will also be held responsible for our fostering care of colleges, to which we must look for all that is highest and best in dental education.

But let us not be responsible for any arrangement or understanding which shall so emasculate the college that it shall become only a kindergarten or a primary department to prepare scholars for the State Examining Board.

President Jack. The next proceeding will be the opening of the discussion of Dr. Magill's paper, by Dr. W. E. Van Orsdel, of Sharon, Pa.

DISCUSSION.

Dr. Van Orsdel. It is characteristic of Dr. Magill to be thorough in everything he undertakes, hence he has well considered the subject of dental law and dental education. His long experience on the Committee on Enforcement has thoroughly identified him with dental law in Pennsylvania. His experience on the State Examining Board makes him an authority on dental education. The necessity for dental law is due to lack of education by the profession as well as the people. All movements favoring dental legislation have originated among the profession. The doctor says that is true. It is also true that the enforcement of law, as far as it has gone in Pennsylvania, has been by and through the profession. Many of us have given such enforcement only a half-hearted support. The fear of engendering animosities among the people has caused many of us to stand aloof. I at one time was guilty in that direction, and suffered for my cowardice by gaining the animosities of those whose favor I desired to retain, and at the same time rested under the stigma of having failed to support

my professional brethren at a time when my help would have been valuable.

The Lake Erie Association had prosecuted an illegal practitioner in my own town. When the bill of indictment was taken before the grand jury for consideration, through sympathy and politics it was ignored, and when returned by the presiding judge with instructions to find a bill it was a second time ignored. Some old soldiers on the jury were led to believe it was an effort to interfere with an old soldier making a living. A prominent politician saw votes and political influence in the enemy's camp by using his influence to defeat law and justice. I have always felt that if I had done my duty I could have prevented that wrong. Being an old soldier myself, I could have neutralized his influence in that direction, and could have said to my political friend, "Hands off."

I have mentioned this circumstance, hoping that if any of you should at any time be placed in similar circumstances you may learn a lesson from my experience and do your whole duty.

The Pennsylvania law is weak in its enforcing clause. The paper refers to it by saying that "it does not assign to any public officer the enforcement of the law."

Our physicians have a provision in their law by which the penalty is divided with the informer. Had we such a provision, it is my opinion we would have little trouble about the enforcement of it. Failing such provision, it is our duty to see that the Committee on Enforcement be clothed with sufficient power and backing to enable them to proceed against any and all offenders. A fund should be created by assessing the members of this association, by soliciting contributions from those of our profession not members and yet protected by the law. Once let it become known that we are ready and prepared to move upon all offenders, and illegitimates will seek more congenial regions or qualify themselves. Local societies in some places have done well, but their field is limited, and this society should be the one to protect the whole State.

The necessity for dental education is beginning to be appreciated among some of the people. The grand inclination of the people to nibble at anything savoring of humbug stands in the way of their full enlightenment. First educate well the dentist, and then let him be a teacher of the people.

I think we are getting too many schools; there should be some law regulating the chartering of such institutions, so as to make it necessary to clearly show the necessity of the school before granting the

charter. Our schools should in some manner be so protected as to do away with the necessity of cultivating the "commercial spirit" spoken of by the essayist. The necessity for the re-examining of graduates by state examining boards is to be deplored. For that, we as well as the schools are responsible. A dentist should be not only a man of cultivated mind, but he should also, in plain words, be a mechanic. The term may sound offensive to some of us, but it best expresses the idea. In our offices we should see to it that no one is encouraged to go to college and complete his education who has not the ability to acquire the necessary mechanical skill as well as the cultivation of mind. We doing our part, let the colleges reform themselves. Mistakes will happen. That they have been happening with too alarming frequency I fear is true. Many graduates, well posted in theory, utterly fail in manipulative skill or the ability to acquire it. That is wrong. Adaptability is one of the great requisites in our profession. How often we are called upon to fall back entirely upon our own resources. In such cases, how often lack of ability is concealed with the forceps. Let preceptors and colleges see to it that they whose hands cannot be educated to execute to an extent as the mind dictates, shall early fall by the wayside. By so doing many brilliant attorneys, eloquent divines, and successful business men or first-class farmers will be saved to the world who would otherwise eke out a miserable existence and aid in bringing an honorable profession into disrepute.

It seems to me it can only be done by educating the people.

Dr. Magill has suggested one remedy,—the press; as to the how and in what manner it shall be used, is a question. A professional code of ethics, which it seems to me belongs to the past ages, stands largely in the way. How shall we get around it?

President Jack. You will now have the pleasure of listening to a continuation of the discussion by Dr. Albert Westlake, of Elizabeth, New Jersey.

Dr. W. E. Truex. Mr. President, Dr. Westlake is not present. He is unavoidably detained at home. He expected to have been here to-morrow morning, or to have his paper here to be read. I believe it was on the program for to-morrow morning.

President Jack. The subject of the two papers is now open for general discussion.

Dr. L. Ashley Faught. Mr. President, we have had a great many papers written on this subject, all of which have presented various

phases of it, and many things which we all can commend. We have listened to one that undoubtedly speaks from the college standpoint, and we all know, from the ability of the speaker and from the position in which he stands and the relationship he bears to the question of education, that he has very probably voiced to us the sentiments of that side of the profession. He has stated to us, among other things, that every improvement which has been made in the colleges for the elevation of the standard of dental education, every facility that has been given in the matter of the education of students, has come from the college faculties. Now, there is no doubt in the minds of the profession that we owe to the colleges many thanks for what they have done in the way of providing the means and material to facilitate study, and yet we must not forget that it is also equally true that such provision of facilities made in almost any direction is made as the result, at least in some measure, of pressure from the outside. A merchant rarely provides in his store or offers for sale anything above the demands of the community ; and unless the dental profession had grown and found the need of a higher education, and unless pressure had been brought to bear from outside of the colleges through many years, I do not believe we would have reached as high a standard of education as we have to-day. We must not ignore the fact that the improvement is not entirely due to the professors in the institutions of learning, but is due in some measure to pressure brought to bear by the profession at large.

The essayist speaks in his paper of those who want to antagonize the colleges. I never heard that expression before on the part of any professor, that members of the profession wanted to antagonize the colleges. That is a new word to me in that connection. On the contrary, I think the feeling in the profession is a desire to help the schools, to do what they can to elevate the standard of education, and I cannot comprehend that idea of a professional man antagonizing the schools.

Then the essayist spoke in regard to the length of the school term. Suppose we were to increase the length of the school term, how long do you think the schools would exist? I think that if the standard were raised very much, and the term lengthened, many schools would drop out of existence ; but it would also happen that a greater number of students would come to those that survive, and there would be sufficient students to keep them up on the scale of a broader education.

Reference has been made to the annual growl that is heard against

the colleges ; and it was said that that annual growl does not disturb the faculties of the colleges in any way. Well, we had a little annual growl last year, and it is most remarkable, if it did not disturb the faculties of the colleges, that at this meeting we have more representatives of the colleges than we have had at any meeting for a long time. There may be some other cause for that honor, and it may be a fact that the annual growl has had something to do with it.

Then we are told that the bulk of the profession is entirely at heart with the professors in our institutions. That may be true.

Dr. Essig. All with whom I am acquainted.

Dr. Faught. Very well, then ; that includes all in Philadelphia. Yet it is a most remarkable thing that when efforts are made to enforce the laws and to elevate the standard of dentistry, our experience has not coincided entirely with that axiom. The fact is that instead of antagonizing the schools, the enforcement of the law has driven hundreds of students into the college institutions, and the records show it.

Dr. Essig. Mr. President, if it is in order, I want to say that as long as ambiguous remarks are made in reference to the colleges, I know of no other term for them but antagonism and growls. I said in my paper that I thought it would be more generous and manly for gentlemen who had anything against the present system of dental education to say so plainly. It is ambiguous attacks that I do not feel like dignifying by any other terms than growl and antagonism, and I do not feel like changing that language in the least.

Dr. W. F. Litch. Mr. President, there is a sentiment entertained here, and I observe it in your very admirable address, which rather surprises me : that is, the suggestion that the action of the examining boards was, or their very existence was, deprecated by the college faculties. So far as my own personal feelings go, and so far as my observation and knowledge of the sentiments of the faculty with which I have the honor to be associated go, I must enter an emphatic disclaimer against that assumption. Personally, and I think I can speak for every member of the faculty, I may say in all sincerity that not only do we not antagonize the examining boards nor take umbrage at their action, but we are in sympathy with them. We feel that we are indebted to them for their action, which has not only been a stimulus to the students, but has been a stimulus to us as teachers to give better and more thorough instruction.

Professor Essig has undoubtedly struck the keynote of the situation in saying that the great defect in dental education heretofore has been the want of system and want of thoroughness. Professor Flagg, in

his remarks to-day, drew a picture of the possibilities of cheating and deception on the part of the student which was truly a pitiable one. It is undoubtedly a picture of what may have been possible in the unfortunate past, but it is a picture of what should not be possible under existing conditions, under the advanced system of dental education that is being enforced in our best schools. Such a condition of things as has been portrayed by Professor Flagg must indicate an entire absence of examination except at the end of the course, and that the teachers in the school are simply lecturers, not teachers in any true sense. I think the time has long gone by when instructors in dentistry can be satisfied by giving the ordinary lectures, and making a final examination at the end of the five or six months' term. Those lectures should be coincident with frequent and strict examinations as to the progress of the student. Such a system I have endeavored to introduce. Every week or two written examinations are held, and there is very little possibility of any ultimate deception at the end of the course. It is true that students are pretty sharp about getting over these examinations by writing upon their thumb-nails and getting somebody to help them ; but in the end, if the final examination is of the proper character, the result of their cheating will be discovered in the written and oral examination.

Another important method of advancing dental education was outlined by Professor Essig : that is, by confining the instruction of students to the practical branches during the first term. Further than that, the professors should be with the students during every hour of their career as students, checking them in every error and encouraging them in every success. By constant repetition of these details there would be a far greater degree of excellence attained than is possible by the old methods. It is only by such systematic methods that it is possible to have the result that we all desire, in sending out into the world thoroughly educated dental practitioners.

Dr. T. C. Stellwagen. Mr. President, I have listened now for two years to the discussions that have been held by the associated societies of Pennsylvania and New Jersey, on the subject of dental education, and as I hold the double position of a member of one of the societies and also a member of a college faculty, I cannot but look at it with some delicacy and embarrassment ; but I feel that the only manly way is to come out plainly and talk with you as brothers. I feel that there is a very grave defect in our meetings of the society. In our faculty meetings we speak to each other frankly ; we find fault with each other constantly, and we endeavor to pick the beams and motes out of each

other's eyes ; but here we have been entertained very largely with insinuations, innuendoes, and suspicions, rather than open, manly, plain talk. And furthermore, I feel very much as if we were getting into the position that we have inherited from old Adam when he said, "The woman gave to me, and I did eat." Now, that is not the way to advance anything, by proclaiming what other men are to do, or what our faculties ought to do, or this, that, and the other thing ought to be done by somebody else, and we ought to be excused. It reminds me of the advice given to a young lawyer by an older member of his profession. The young man told him that he was engaged in a suit where he had no case at all ; it was absolutely without a leg to stand on, and he wanted to know what to do. "Oh," said the old gentleman, "abuse your opponent then, abuse your opponent."

Now what I would like to know is, What has the Pennsylvania Society done to advance dental education in the last two years? I ask you frankly, has it done its duty? I remember very well when, in 1868, Dr. Magill and a number of others whom I see here established the State Dental Society of Pennsylvania. How many had we in attendance at that time? Nearly as many, sir, as have attended at these last meetings, very nearly as many ; and year after year this society has gone on discussing this subject and that subject, throwing doubts, fastening suspicions, and making us see that when we come together, instead of putting out our hands and shaking hands like men, we feel as though we wanted to stab this one in the back, and wanted to stab that one somewhere else. Now I believe that the State Dental Society is making a mistake. I do not say that the college faculties are immaculate ; I do not think they have no faults ; but I do say that the proper way to explain and correct the faults of these faculties has not been adopted. It is not to go around the corner and cry boo ; but come out in the middle of the floor and state the reason and give the cause, and not pretend that we have a great mass of evidence, which finally turns out to be merely smoke. It suggests the reverse of the old story of the mountain in labor bringing forth a mouse ; in this case it seems to me that it is the mouse that labors and brings forth a mountain of nothing. Instead of spending all of our time in finding fault, as we have done, spending pretty much all the time in finding fault with the college faculties, let us state where they are wrong, and let them correct it if they can ; but let us take up the main point, which is our own education. We have learned more and better since we left college than we did at college, and the post-graduate education is the kind of education that I expected we would

get in the establishment of the State Dental Society. How much did we get? It is like an old-woman business : whispering in each other's ears and making assertions on the floor, and going outside and telling that we have got thus and so in our pockets. Let us endeavor to enlarge the membership of the State Dental Society by making the meetings of sufficient interest to draw in all the graduates of the colleges and all the practitioners in the State of Pennsylvania. We do not want a paltry fifty, or twenty-five, or thirty-seven, as I have seen in our meetings when voting for officers, but we want fully five hundred dentists present at every meeting of the State Dental Society.

Dr. S. H. Guilford. Mr. President, I have only a word to say, and I don't know that I ought to say that. I was very much struck this evening with the manliness and outspokenness of the paper of Dr. Essig. He said in his paper what I have often felt, but have never expressed, and what others have doubtless felt and not expressed, but which is a fact, conceal it as you may. At the different meetings that have occurred in different States and different localities at different times, the praise that has been given to the colleges for their work has been meager, and the criticism has been extended. I have a feeling upon this subject, simply because this criticism is so very general and common. I make no claim that the dental college faculties are perfect, nor anything of that kind ; but I do think there is a disposition to criticise them sometimes unjustly. The members of the profession ought to remember two or three things : first, that the dental colleges are exactly what you of the dental profession make them. The students that they receive come from your hands ; you have prepared them for the college, and when they come to the college they are dealt with according to the best abilities of the teachers. They do with them what they can ; it is impossible to do certain things. You remember what is said about making a silken purse out of a certain article. It is impossible. We have to take the material that comes to us, and do the best we can with it. So far as I know, the professors of colleges are trying to do the very best they can in that direction.

Regarding what the colleges have done, I will say that whatever the profession has asked of the colleges in the past has been granted. In the beginning the colleges were in a very low position, because very little was known about the formation and carrying on of dental colleges ; but as the profession advanced they said to the colleges, We want you to do this, and it was done ; We want you to do that, and it was done. In the beginning honorary degrees were conferred, but after a while the profession said, We want that abolished, and it was

abolished. Then came the graduating of men on five years' practice. The profession said, We want that abolished, and it was abolished. After a while they said, We want every student to have two full years' instruction, and that was granted. Then they said, We want the term further lengthened, and that was granted. And so on, step by step, everything that has been asked of the colleges has been granted. We believe they should receive credit for what they have done. They have granted everything asked for up to this time, even granting a three-years' course. They have done more than that ; many things that they have done are not known to the average practitioner. How many practitioners come to the college and sit at the lectures? How many come to the laboratory to see the work done there? How many come to the commencements to see what is going on? Very few. Even in the city very few take the trouble to come in and look on. It looks like lack of interest. Many things have been done that were not demanded. Eleven years ago, when I first started to deliver a certain number of lectures every week, I had a certain amount of other duty to do. At the present time I am doing more than double that work. Has any demand been made for that outside? Not at all. The demand has come from the students themselves, to do more for the students than was done before. It is a moral and intellectual demand, not a public demand. The lectures have been improved and the courses have been extended. The number of practical demonstrations have been multiplied on every hand, and the student to-day is getting probably ten times as much instruction as I did twenty years ago. So we ought to give credit to the colleges for the work that they are doing.

I always feel sorry, when this question comes up, that the little meed of praise and credit is not more freely given, because I believe the great body of teachers in the dental schools are honest and conscientious men, doing the best they can ; and when I hear little innuendoes about their mercenary spirit and all that, it is painful to me. It is true that professors in dental colleges are paid for their work, and so are you. You practice dentistry because you love it, I presume, but you cannot live on that, and you must have your compensation ; and so it is with the dental colleges.

Dr. Charles S. Butler, Buffalo, N. Y. Mr. President, I do not like to detain you, but I would like to say a word on this subject. I enjoy meeting with you, and I assure you that the pleasure I have received to-day in the consideration of the subject of dental education has more than compensated me for the fatigue and inconvenience I

have suffered in getting here. Yet in the discussion there is an element of sadness ; there is what appears to be a rather harsh criticism on our schools. It seems to me that if we reflect for a moment on the fact that our schools, all that we have in the way of dental schools, is embraced within the lifetime of very many of you gentlemen who are here to-night, and if we reflect upon the condition of our schools a few years ago and then consider what they are to-day, it seems to me that there is very much in connection with the schools that we ought to commend. There has been a steady progress in our schools. While this progress is not due altogether to the faculties of those schools, yet we should give them credit for what they have accomplished and for the promise of what they will do in the future.

We have heard a great deal to-day in regard to legislation. Now, gentlemen, it seems to me that we should not expect too much from legislation. No legislation has ever yet made an honest man out of a rascal, and it seems to me that the remedy for the evils which have been complained of here, with reference to the trickery and deception of students in getting themselves graduated, is not to be sought so much in legislation as it is in that which the colleges themselves have established,—the entrance examination of the student. It is there, it seems to me, that the remedy lies for this difficulty, as it gives the colleges an opportunity to determine, in a large measure, the character of the applicant at his entrance upon his study.

It seems to me that the whole matter of dental education is in a sort of formative state. What is to be the future? We know something of the past, but what is to be the future? I look forward to the time when the dental profession in this country will be so systematically organized and will have so far advanced in the line of a higher ideal that it will be able of itself, through some organized method, to establish a dental school for itself, selecting its own teachers, forming special departments, and selecting men particularly qualified to fill those chairs,—men who shall devote their entire time and energies to the work of investigation and instruction,—and that such school shall be so organized as to receive endowments, in order that it may be able to provide ample compensation for its teachers, so that their best energies and all their time and attention may be given to the work of investigation and instruction. That such a school is possible I fully believe ; and I do not believe that such a school would supersede or do away with the schools of the present day. The schools of the present day would be just as much needed as before, as preparatory schools for the higher institution.

We are a strong, noble, grand profession, and it seems to me that we should look forward to the time when we shall establish for ourselves an institution of learning similar to those of the other professions,—the professions of law, theology, and medicine, and all the branches of higher education ; and if we will all work together, looking forward and striving for the attainment of such ends, this question of dental education will be solved, or at least it will be an inspiration to us to press forward to that purpose, instead of wasting our time and expending our energies in criticism, whether just or unjust, of the manners and methods of each other and of the schools. We shall be bringing the profession forward step by step, and the time will soon come when the question of higher education in dentistry will be one which we may look to as one of the grandest achievements of the nineteenth century. I hope, Mr. President and gentlemen, that the interest that is aroused in this country to-day with reference to the grand meeting that is proposed for next year may bring forth something in the line of higher dental education, and I trust that we shall all bear the parts allotted to us in carrying forward that movement, contributing our little mite, and whatever influence we may have, in the direction of a higher and better education, because we all recognize that that is just what we all need.

Dr. C. N. Peirce. I move that we adjourn.

Dr. G. Carleton Brown. Have I the privilege of closing the discussion on the paper? I will only take a moment or two, but there are one or two assertions to which I would like to reply.

In the first place, the attack on the New Jersey State Board, as I suppose it was intended for, by Professor Essig, in regard to receiving fees : it must seem almost ridiculous to reply to that. I suppose the other gentlemen have read the New Jersey law, and if Professor Essig had read it he would have seen that the New Jersey Examining Board receive not one cent for their work ; they do it for the love of their profession.

Another point that Professor Essig made was that the examinations were oral. The great majority of the examinations of the New Jersey board are written, and we keep them on record for future use if necessary.

Professor Essig and Professor Stellwagen have both said that insinuations were made and facts not presented. I don't know whether they refer to my paper or not.

Dr. Essig. I declined to discuss your paper ; I said I would discuss the subject on a broader ground, and I made no reference to money or fees except in reply to your own statement.

Dr. Brown. In regard to the remark about insinuations and slurs at the dental colleges, I will say that nobody loves the dental college better than the New Jersey Board of Examiners, and I speak for every one of them ; they love their profession, and they uphold everything that is done to help advance the standard of the profession. And I want to say here, on behalf of the board, that we thank the faculty of the Pennsylvania College for the stand they took on our amendment to the law. They backed us, and they were the only college that did back us openly. Other professors wrote to Governor Abbett, asking him to veto that bill. I believe that matter has already been before you, so I will not go on with it. I do not know whether they want any more facts or specific charges as to what the examining board gets from certain colleges ; if they do, we can give them. I can tell you the name of one college that sent a man to us who wrestled with a gold filling for a good while, and then made the remark that he never put in but three, and was not very well up on gold fillings. We have lots of facts.

Dr. C. S. Beck. The remarks that Professor Essig has made about fees have given a wrong impression, I think. I do not want this body of gentlemen to suppose that the Pennsylvania State Examining Board has been benefited financially in any way whatever by their examinations ; and I call upon any one to say whether that board has not faithfully done its duty. I assure you that during the session of this society at Cresson that board has labored faithfully ; we have not had one hour to ourselves, and we have not received for this work one dollar, nor taken one dollar toward our expenses. We have sent many men to the colleges. Our advice to every applicant who comes before us is to take a college course. We have had three or four before us at this session, every one of whom has failed. We have given good advice and instruction to those men. We endeavor to serve the Pennsylvania State Dental Society honorably and squarely and well. We love the dental colleges ; they hold up our hands, and we uphold them. We use every effort for the advancement of the cause of the dental profession, because we love it ; our whole aim is to advance the usefulness of the colleges and the profession to which we belong.

Dr. Essig. I am very sorry if the language I have used has hurt Dr. Beck's feelings ; and I regret it if I said anything about the Pennsylvania State Examining Board that was not exactly correct, and that I had not taken the trouble to look up the facts personally. I learn for the first time to-night that certain improvements and changes

have taken place in that board. Dr. Beck knows very well that a few years ago I did object to the manner in which the examining board was performing its duty. I objected frankly and openly to the idea that the members of the examining board had not had a systematic training, and I did object to any fees received from candidates being used in any other way than to assist in the enforcement of the law, or be turned into the funds of the society. What Dr. Beck has said to me is a very gratifying piece of information, and I am very glad to know that the objection I made before has been corrected. I do not think the Pennsylvania State Examining Board, as constituted at the present time, will do, or can do, anything but good ; but a few years ago it was doing harm. That is the position I occupy here.

A motion was made to adjourn.

President Jack. Before that motion is seconded I desire to ask the privilege of the floor for Dr. Peirce for five minutes, to make some statement concerning the American Dental Association and the Dental Protective Association. If there is no objection, we will listen to Dr. Peirce.

Dr. C. N. Peirce. Mr. President and gentlemen, a communication received this morning from Dr. Crouse, of Chicago, who is chairman of the Executive Committee of the American Dental Association, desires me to state to the societies now in session that that body will convene on the second of August at Niagara Falls ; that arrangements have been made with all the railroad lines for carrying the passengers or members of the societies to and from that convention for a fare and a third ; that every one should buy a ticket and take a receipt for the same, in order to have that signed by the secretary so as to return for one-third fare. He also wishes me to state that the Executive Committee desire that every state organization should send, if possible, a little synopsis of their work during the year, as far as papers had been presented, or any implements of practical interest that have been brought out, sending them to the committee in order that they may be placed before the proper Section.

Another communication received from Dr. Crouse to-day requests me to bring to your attention the fact that the Dental Protective Association is still anxious to obtain as members all members of the New Jersey and Pennsylvania Societies who are not already enrolled in that Association ; that what it has accomplished for the profession is only of partial interest and value as compared with that which remains to be accomplished ; and he asks me to state to the societies that I would present the members with a copy of the by-laws which he sent me, so

that they may attach their signatures and pay the ten-dollar fee, which I will then send to him. The Association has in view a very important law-suit in New York this fall, and they desire to know whether any gentleman can give information regarding the manufacture of an appliance known as the Low patent, or any piece of bridge-work that was placed in the mouth previous to 1880. If any gentleman should have such information, Dr. Crouse would like to have his name, and a record of the appliance so far as it can be given. The suit pending is of the greatest importance, and they hope with it to wipe out now the possibility of prosecuting dentists for using what is known as crown- and bridge-work in the only remaining States where they are subject to it, Connecticut and New York. There is not another State in the Union that would bring a suit against a dentist for infringement upon that supposed patent.

Adjourned to Friday morning, July 22.

THIRD SESSION, FRIDAY MORNING, JULY 22.

President B. F. Luckey, of the New Jersey Society, in the chair.

President Luckey. Gentlemen, the first thing on the program this morning is the report of the Clinical Conference Committee. Dr. Magill will make that report.

Dr. W. E. Magill. Gentlemen, I see that fifteen minutes are allowed for the report of the Clinical Conference Committee. It is evident that the gentlemen of the society expect a great deal more from the Clinical Conference Committee than they are likely to get. I think the fault is on the part of the chairman of the New Jersey committee, who is unavoidably absent. We must confess to the fact that this Clinical Conference Committee is largely experimental; it is in its infancy, and is being tried; and I think the fact of our not thoroughly understanding the real demands of the occasion will account for all that is lacking now. We are not able to report any cases brought before the committee as a body. Some consultations have been had by members separately.

Dr. Magill then read the report of the Committee, as follows:

The Committee on Clinical Conference, believing that an important factor in the work of dental organizations is their educational function, and believing that their influence in this direction can be enhanced by systematized effort, would suggest that the Committee on Clinical Conference be made by both societies a standing committee to continue throughout the year, to act as a

consulting board in behalf of the societies, for the purpose of furnishing expert opinions and counsel upon matters pertaining to dental science and art, and such questions as may arise in the practice of members of the societies and others who may desire it, not only at the annual meetings, but during the year. It is believed that when the existence of such a committee is fully known and its function fully understood, it will tend to increase the usefulness of our State Societies, and the educational value of their reports and discussions.

An informal meeting of the members of the Clinical Conference Committee was held between the hours of nine and ten this morning, and adjourned to meet at half-past twelve, in No. 9 of the wing, first floor. A full meeting is expected, and all persons who have cases to present may meet with us at that time and place.

Dr. Osmun moved that the report of the Clinical Conference Committee be received and placed on file. Carried.

President Luckey. The next proceeding on the program is a paper by Dr. Charles Harker, of Mount Holly, New Jersey.

Dr. Harker then read the following paper :

ANTI-CONSERVATIVE TREATMENT OF THE EXPOSED DENTAL PULP.

MR. PRESIDENT, AND MEMBERS OF THE PENNSYLVANIA AND NEW
JERSEY STATE DENTAL SOCIETIES :

With diffidence and much reluctance I consented, a few weeks since, to read a paper before the joint meeting of these two intelligent and learned bodies of men ; with diffidence, because unaccustomed to appearing before public audiences ; with reluctance, because of the fear entertained that I might not be able to do credit to the well-earned high standing of the New Jersey State Dental Society and the wisdom of its Executive Committee in representing them. Feeling, however, as a member of our society I owe it the duty of my best endeavors, it has been a pleasure for me to group together some thoughts upon the somewhat hackneyed theme of pulp-treatment.

The fact that this subject has been much written upon proves its importance ; furthermore, it shows that there is no definite settled method of dealing with the exposed dental pulp.

Notwithstanding we have heard it stated with emphasis that in society meetings of this kind we should discuss *principles*, not *practice*, I have chosen this subject, and shall endeavor to treat it practically ; believing that, while principles and practice should never be

entirely divorced, we owe more to the benefits of practical discussions than those involving general principles. The title of my paper makes clear the fact that, with me, the method of treating exposed pulps is the radical one. To this method I was driven by my almost universal failure in pulp-capping and palliative treatment previous to the last five years.

During the last five years I have devitalized more than ninety-five per cent. of all exposures presenting in my practice, with no percentage, so far as I know, of failures to record. If, therefore, I have been successful in any department of practice, it is with these most difficult and perplexing cases; and if I can convey intelligently this anti-conservative method of successful practice to one young operator, sparing him and his patient my early failures, I shall feel more than repaid for my endeavors. I say most difficult and perplexing, although, if we read over the articles on conservative treatment which have appeared in dental journals during the last decade, we may conclude that the dental pulp is the most manageable and accommodating of vital tissues. I do not wish to say anything that will reflect upon what has been written or said in discussion upon conservative treatment, or that may seem to laud a method (I will not say my method) of successful practice by devitalization; but I would present the facts fairly, as they have presented themselves to me during an experience of about ten years of busy practice. I am well aware that I shall be arraigned by the able conservative advocates present for my so-called wholesale destruction of vital organs. Be this as it may, I must state my convictions, based as they are upon my own experience.

When I state that I devitalize ninety-five per cent. of all exposed pulps presenting in my practice, with no percentage of failures, I do not wish to be understood as claiming entire immunity from trouble subsequent to devitalization, extirpation, and root-filling. Teeth having abnormally formed or compressed roots, constrictions, nodules of dentine in canals, pulp-stones, etc., present difficulties not unsurmountable, but requiring skill and patience for their successful treatment. I do assert, however, that by faithfully following the line of treatment which I shall suggest, neither the operator nor his patients will have very much of which to complain. In my practice, in less than one per cent. of the teeth operated upon has there ensued irritation of a nature serious enough to require removal of the permanent filling; and in these exceptional cases subsequent treatment has resulted in restoration to comfort and usefulness. In no case do I recollect an abscess having formed subsequent to root-filling following extirpation of the pulp.

On the other hand, my experience in capping the fully exposed pulp, due to extensive caries, has been almost always followed by pain to the patient and trouble to myself or my neighbor dentist, with disaster to the tooth within two years, unless the pulp was promptly devitalized, removed, and the root-canal properly filled. I say disaster to the tooth, because, when the tooth is left to absorb the putrescent products of a decomposed pulp, the tooth-tissue itself suffers irreparable injury ; not only in appearance, but structurally as well. It is indeed a rotten tooth. The dentinal tubuli having become saturated with the gaseous and sanious products of decomposition, the basal structure altered, the enamel discolored, checked, and brittle, we have a tooth unwholesome to its surroundings, and infinitely inferior in strength and comeliness to the tooth whose exposed pulp has been extirpated at sight or devitalized by the usual process, removed, and the subsequent operations of root- and crown-filling completed properly and at the right time, in which case the strength, color, or structure of the tooth are but slightly affected, and appear not to affect its surroundings at all.

I have two teeth in my own mouth whose pulps were devitalized, roots filled with creasoted cotton, the crowns with amalgam, by Dr. Brown, my preceptor, now our worthy Treasurer, about twenty-two years ago. After the lapse of twelve years, the fillings, having become defective, were removed and the cavities refilled, until which time I did not know the pulps had been devitalized ; and, with the exception of a little peridental irritation in one of them at the time of refilling, due to the unnecessary removal of root-filling to substitute a solid filling at the apex (in most cases a bad practice), the teeth and surroundings have been perfectly healthful and useful. They appear now to be good for at least a score more years of active service. I could give instances of teeth having been treated likewise, in which more than forty years of uninterrupted health and usefulness have been enjoyed. Most dentists, however, I think, have now improved upon this old method.

Notwithstanding cases similar to these frequently come under our observation, I do not claim that pulps should never be capped. In traumatic cases, when the excavator has accidentally punctured the internal-dental membrane, or when accidental fracture has occurred, slightly exposing the pulp, capping should be practiced, especially as cases of this nature are usually the more favorable ones,—those of young patients.

No one, I think, is more careful than the speaker about lining

deep cavities in teeth whose pulps are not exposed. Magitot, in his treatise on dental caries, not only tells us, but clearly demonstrates by beautifully illustrated cuts made from microscopic sections, the pulp complications in those cases where no exposure, or even near approach to it, exists. Capping with oxyphosphate or oxychloride, to which is added about one part carbolated vaseline to ten parts of the oxide, in these cases conduces very materially to conservation of the pulp's vitality ; and yet, more or less frequently, we all have pulps to die when capped under these most favorable circumstances. Whether we attribute loss of vitality to the continued irritation due to previous caries, the impingement of secondary dentine which nature has furnished for the benign purpose of forestalling exposure, thermal changes, "taking cold," or what not, the result is the same, proving that instead of being easily manageable, a tooth-pulp is so treacherous that we can never predict with certainty the results of a capping operation.

The capping operation is based upon a most beautiful theory : there are many beautiful theories that do not work well in practice. I have always been in the habit (it may be a bad one) of uncapping all capped pulps coming from the hands of other dentists into my hands for treatment ; that is, when refilling has become necessary or disease is apparent. In this way I gain certain knowledge of the conditions present at the time of my operation, which it seems to me can be gained in no other way.

In almost every case in which the tooth has remained comfortable, I find no real exposure exists or ever did exist. A small percentage of these, however, have quietly succumbed, especially those in which the regular oxyphosphate mixture has been used. Cases in which real exposure existed at the time of capping, I have usually, though not always, found dead. When alive they appear very much as before the capping, more or less diseased, but apparently resisting progressive diseased action, while the vital forces are strong in the individual, but ready, whenever systemic changes occur reducing vital force, to take on an acute local inflammatory condition resulting in death *en masse*.

I am aware that those who advocate conservative treatment claim by a little properly directed antiphlogistic treatment to be able to allay all irritability ; but to my mind the treatment of an inflamed tooth-pulp by leeching, cold applications, purges, etc., while the irritant (the plug) remains *in situ*, is too absurd to need comment. The above treatment may be *scientific*, but if the scientific dentist had

himself undergone a capping operation, and in a few weeks the dental organ began showing signs of developing into what Shakespeare terms "a raging tooth," I can imagine him *commanding* the cold scientist to "throw physic to the dogs," and get at the offending pulp instantler, dead or alive.

Pardon the little digression, and I will return to my subject.

I have yet to find the first instance of a previously exposed pulp, due to caries, having itself, after capping, wrought out physiologically the theory which the capping process promises, or rather, I should say, the result which the conservative advocate promises for the theory. That this physiological deposit ever takes place after *caries* has caused a rupture of the pulp-membrane, is still a question. No one, I think, would assert that the pulp ever *does* return to a perfectly healthful normal condition. That it may after exposure due to traumatic cause, it is more reasonable to suppose. In the former instance we have a condition akin to that in an ordinary sore, which, having sloughed, can only heal by granulations. In the latter, I see no reason why the accidental rupture might not heal by first intention.

In my experience, as I have said, the membrane when ruptured by caries does not heal at all; when uncapped it always presents a raw surface. I have, however, in a number of instances accidentally punctured the pulp in excavating, and having capped and filled with cement, after the lapse of a year or more, upon uncapping I have found no exposure existing, calcific matter having formed under my cap. Under the calcific deposit I have no doubt cicatricial tissue had formed, occluding the puncture of the pulp-membrane.

In the case of a girl, ten years of age, having by a fall broken off the mesial corner of a superior central incisor, exposing the pulp so that it bled slightly, I at once capped and built out to the original contour with gold. Five years afterward, while playing at school, she again fell, breaking away the entire filling. Upon removing the cap, I found this pulp beautifully protected by a secondary deposit of well-formed tooth-bone. I consider this a case of healing by first intention, the ruptured membrane having united; and similarly to the periosteum in case of a broken bone, it afterward elaborated the secondary tooth-bone.

These cases, though interesting to study, do not come under conservative treatment in the usual acceptance of the term. I merely cite them to show the distinction, and also to show that we *must* have the ruptured membrane reformed before we can have its function restored. Experience proves that after rupture by caries it does not

reform ; it cannot, therefore, produce the secondary deposit claimed by the advocate of conservative treatment.

Fearing an unjust inference may be drawn from the somewhat unfavorable statements I have made relative to pulp-capping over in Jersey, I must add that more than one hundred of my patients came from the Keystone State.

Since this paper has been in course of preparation a patient has visited my office, in whose lower jaw I found six dead teeth, whose pulps had been well and scientifically capped previous to their demise, by an eminent Philadelphia dentist. Another case had been treated, coming from the hands of an Emeritus Professor, in which mouth I found three suppurating abscesses, with another tooth in the incipient stage, the results of well-capped pulps. I might enumerate other cases not so recently treated of patients coming from other states, which are equally striking illustrations of disaster resulting from unwise but well-meaning endeavors at pulp-conservation on the part of otherwise successful practitioners. I do not cite these cases of failure in a spirit of unkindly criticism of the operators to whom reference is made,—they are men of infinitely greater attainments than your essayist. I only wish to show that the best have failures, *very many* failures, on this line, and that we *cannot* conclude that these ill results are due to soil, climate, patients, or the dentists of New Jersey.

I am not an extremist. I do not believe, with some, that the whole office of a tooth-pulp has been performed when it has finished the construction of the tooth in which it is located. On the contrary, I believe its function never ceases while it is in comparative health. It continues to nourish the dentine, and under some circumstances to elaborate secondary dentine, notably when the pulp is being encroached upon through mechanical or chemico-mechanical abrasion, and when caries is threatening exposure. I do not, therefore, wish, nor would I dare to claim, that a dead tooth is as good as a live one, other things being equal. I advise, and, as I have stated, practice protecting the pulp as long as there is any reasonable hope of aiding it in the continued performance of its healthy function ; but when exposure has resulted from carious action, I consider that in *all* cases the greater certainty of freedom from further pain, trouble, and expense to the patient, annoyance to the operator, and the greater security of the filling,—thus insuring preservation of the *tooth*,—more than compensates for loss of vitality of the pulp, especially as I *know* the tooth may be preserved comfortably to the patient by devitalizing it. In other words, I believe I practice conservative

treatment of *teeth* by non-conservative treatment of the diseased pulp. I ask you, is this not good surgery? In the practice of general surgery, does the surgeon hesitate to destroy the diseased *part* of an organ, if thereby the function of the *whole* may be preserved? Should we, then, as special surgeons, hesitate, especially as we, unlike them, are able to substitute artificially the lost part so perfectly that our patient feels, sees, or knows no loss?

The practice of dentistry is very largely special surgery, and no other kind of surgery requires such delicacy and accuracy of manipulation as does the successful practice of dentistry. We have much less to hope for from nature's processes, and consequently much more depends upon our own efforts and operations. The dental surgeon is of *necessity* either a most accurate workman or else a failure. The operations involved in dealing with exposed pulps, whether by extirpation or capping, call for exquisite skill and nicety; careless or indifferent operations will fail in the former sometimes, in the latter always. Indeed, upon the exercise of judgment and skill in this department, toothache cases, depend very largely the numbers of our patients; it is vital to our success. How, then, shall we treat them? Two methods are open: palliative and radical. Upon the former we have dwelt sufficiently at length; the latter I will now endeavor briefly to describe as I practice it. There may be nothing *new* or superior in it, but when thoroughly performed it *is* successful. The teeth do not to any extent check, chip, break, discolor, or give other annoyance to patient or dentist.

The models which I will pass may assist me in showing the partial and completed operations.

These patients call *always* without previous engagement, and at a particularly busy time, suffering with toothache either from a freshly exposed nerve, or one upon which our neighbor dentist has placed a plug to "save it alive." Upon some days there appears to be an epidemic of these cases, and I am not quite sure that what appears to be is not really true. Atmospheric changes do greatly conduce to the discomfort of these patients. However busy we may be with previous engagements, the sufferer regards it (perhaps justly) as altogether inhuman if we do not at once attend to his wants. We do not, therefore, stop to argue the question of rights and privileges, but, leaving our patient and stepping to another chair in which the sufferer has been placed, remove the plug, or, if it is a fresh exposure, the decomposed dentine, and put the exposed portion of nerve in a pickle of pure carbolic acid for about two minutes, then cover with sandarac

and cotton, and dismiss until the next day, at which sitting the previous medicament is removed, and the arsenious acid applied directly to the exposure, sealing again with sandarac and cotton.

I request the patient to call on the fourth day, when the arsenic is removed, the pulp entirely uncovered, and a portion excised, bleeding it freely to prevent pinking of tooth during the waiting time, about three weeks, while nature is deciding how much of the pulp she will give up. I then place in the pulp-chamber (from which the pulp has been excised) a piece of dry absorbent cotton carrying as much as it will of iodoform powder, the piece of cotton being large enough to fill the pulp-chamber only. I then fill the cavity, which has been kept dry, with a temporary gutta-percha stopping until the final operation, when I place the dam upon the tooth, and extract the pulp from the root or roots. With a No. 7 or No. 8 uncut Swiss broach having a perfect taper point, I work a mixture of campho-phenique, iodoform, and zinc oxide to the apex, followed, after absorbing the fluid in the canal, by a tiny fiber of dry cotton carried as nearly to the apex as the previous mixture will allow without painful pressure.

This procedure insures carrying without pressure a bland sterilizing apical stopping entirely to the imaginary "apical space"; that is, to the border line separating devitalized dentine from living cementum and its investing membrane.

Removing with a broach the fiber of cotton, and drying the canal as thoroughly as possible with a cotton-wrapped broach, the remainder of the canal, when of normal caliber and formation, is filled with a gutta-percha cone made to fit the canal, the point of the cone having been moistened with chloroform previous to introduction. The apical portion of the canals in two-rooted bicuspid, compressed anterior roots of lower molars, and other tortuous or constricted canals, may, by using No. 7 *slender* Swiss broaches, usually be well filled either with the antiseptic material I have indicated, or with chloro-percha.

Except for the removal of adherent and other calcific deposits, I never ream canals more than may be done with the ordinary bud-shaped excavating burs; canals which may be reamed without too great danger of going through the side of the root, or the breaking off of the reamer, may be well filled without reaming. Nicely tempered slender broaches adapt themselves without danger of breaking; reamers do not.

There is a field for the exercise of judgment in removing or overcoming the occasional difficulties of the apical territory, which perhaps no written description would cover, but which the cultivated

judgment and touch, together with delicately formed and properly tempered instruments, will enable us to surmount with comparative ease.

Some of these exceptional conditions would have caused trouble and ultimately death, had the pulp been capped and the capping operation *itself* been successful. The difficulties must, then, be met under conditions and circumstances very much exaggerated, or the tooth lost.

The cutting away of tooth-walls to facilitate approach to canals in different locations, the lining of their frail walls to strengthen and prevent discoloration, are well shown upon the teeth of models.

I do not remember ever having heard mentioned the method of approach which I use in distal exposures of lower molars (sometimes I use it in the upper), and would here call attention to it: viz, by cutting away the posterior buccal corner as far as the buccal seam (instead of the usual drilling through the buccal wall), the access of light, the line of vision, directness of approach, and movements of instruments are less obstructed. I think you will also agree with me that in addition to facilitating the whole operation, a tooth so treated is stronger than when prepared and filled in the usual way. I sometimes demonstrate to students this, which I consider the most difficult case, and perform the operation of extirpation, root-filling, and contouring of crown with amalgam in forty-five minutes.

If the arsenic has been well triturated, the proper dose used, the pulp well exposed before applying, the sandarac bottle warmed before using, and no pressure made upon nerve in sealing up, there will very rarely be any pain from the application, and no danger from the effect of arsenic upon the peridental membrane, either about the apex or gingival margin or the gum.

In case the effects have not reached throughout the whole extent of the pulp (which case seldom occurs), I remove the portion of pulp devitalized, reapply minute quantities of paste, one part arsenious acid to ten parts iodoform, moistened with campho-phenique, or else anesthetize locally with cocaine, and remove.

I much prefer removing the entire pulp to the apical constriction; but if unable to do so, no harm will come from leaving in the canal the slender apical fifth of pulp, whether dead or alive, provided the anti-septic filling I have recommended be well picked into it; if not dead it will die, become mummified, and make a fairly good apical filling.

When trouble does ensue after devitalization, it is from one of two causes: either peridental irritation arising from an overdose of arsenic, the inflammation set up by the drug passing, by continuity of pulp-

tissue and membrane, through the constriction, and involving the external membrane reflected over the apex, an almost immediate sequence ; or else it is due to ultimate disintegration and evolution into septic gases of unsterilized shred-like portions of the pulp remaining in the inaccessible portions of tortuous or restricted root-canals.

In my experience, the former difficulty rarely occurs, and always subsides in a few days without treatment. I have already referred to the infrequency of the latter. When it does occur, it is of more serious nature ; but its consideration would take us into treatment of incipient abscess,—a discussion beyond the legitimate compass of my paper. I will therefore conclude with the statement that to be successful we must carefully forestall these complications, or else combat them successfully should they arise. I have intentionally omitted any mention of the treatment of temporary teeth, fearing my paper is already too long. It should be modified to meet the difference in conditions : sometimes the treatment is extraction, sometimes palliation in the deciduous when it would be radical in the permanent teeth.

During the reading of his paper Dr. Harker made the following extemporaneous remarks :

Mr. President and gentlemen, you will allow me to explain that, on account of a typographical error, the program makes the title of my paper read, "The Anti-Conservative Treatment of the Dental Pulp," instead of the "Exposed" dental pulp.

I do not cite these cases in any spirit of criticism of the operators, who are men infinitely superior to your humble servant in professional skill ; but I certainly can show that the best operators have very many failures in this line of treatment, and that the ill results are not due to the soil or climate of New Jersey.

I have had my student make a model of a lower molar, one of the most difficult cases, and I have it here for demonstration. This is a lower second molar, this being the distal surface, and we find these cases with a cavity in that position, extending to the pulp ; exposure, and an aching tooth. They are difficult of access, very difficult to see, and very difficult to approach. The ordinary method is to destroy the pulp, if that is decided upon, and fill the cavity, then open into the buccal surface and remove the pulp from the crown on the buccal aspect. I do not do it. I remove the decomposed dentine, to be certain to know where the exposure is, and make the application directly to it, and treat it as I have mentioned. I begin at this buccal

fissure and cut down there, and remove the disto-buccal portion. That gives perfect access. There is no difficulty about it in that case. I find that the tooth is stronger and better after the operation than it would be if I drilled an opening in the buccal surface, which weakens the already weak corner, and the tooth breaks away. I have never had a tooth break away in those cases, and the filling will not come out. Back of the prominence the filling is locked in. I think this is at variance with the usual practice, but I find it good in my practice.

I sometimes demonstrate this operation to my students, performing the whole operation of removing the pulp from the canals, and filling the roots and contouring the crown, in three-quarters of an hour. It formerly took me longer, but by using what I consider improved manipulation it is easily done in that time. Then the use of the broach will gain much time. I cut my broaches off, so that the handle is only as long as the width of my finger, then put the handle of the broach in the mouth, first over the anterior root; then by passing it forward and downward, taking the line of the root, in the longitudinal direction of the root, it is easily inserted and the pulp easily removed, unless the root is compressed, in which case you must go down both roots, and have a very fine broach to do that.

Dr. S. H. Guilford. Mr. President, I would like to move that the courtesy of the floor be extended to Dr. Z. B. Taylor, of Orbisania, Pa.

President Luckey. We would be pleased to have Dr. Taylor take part in the discussions.

Dr. Z. B. Taylor. Mr. Chairman, I did not come here for the purpose of addressing a convention of this kind, neither had I contemplated it, but I am glad to see this morning that the convention is really very interesting. There are many points that have been raised here that are calculated to make every member who is interested in the profession think; and this seems to me to be the ground-floor upon which we are traveling as a profession, to think wisely and to act wisely.

President Luckey. As Dr. Beck is not present, Dr. Sanger, of East Orange, will open the discussion of the paper that has just been read.

Dr. Kratzer. Dr. Beck, before leaving, requested me to state to the body that, thinking the paper would be called up yesterday, he had made arrangements to leave Cresson this morning, in order to meet his wife at their country home, and that he was very sorry he could not, on that account, be here to read his paper.

DISCUSSION.

Dr. R. M. Sanger. Mr. President and gentlemen, I am laboring under very great disadvantage, consequently you will pardon me if I say very little. In the first place, the paper which I am supposed to discuss did not come into my hands until a very late hour, after I had reached this place in fact; and, in the second place, I have a severe cold, and can scarcely breathe. However, I feel that I ought to do a little toward starting the ball rolling, particularly as heretofore there seems to have been a little diffidence manifested about beginning a discussion where one was appointed to that sometimes unpleasant duty. I think that, as speakers to papers, we have all been inclined to believe the adage that he laughs best who laughs last, and have wanted to be the one who laughed last, and so have waited for others to speak.

In regard to the paper, I want to thank Dr. Harker for the very careful digest of the subject he has given us. It is discouraging to the discussor, from the fact that he has not left us much to fight on. You know that when you want to discuss any subject, you are never happier than when you find the man who presents the subject making some terrible blunders. But the doctor has not done that; he has given us a well-digested paper, and there is very little left to be said by me on the subject. There are, however, a few points that I would like to speak on.

First, I do not think the doctor is radical enough in his method. From my standpoint he is not. He says that of pulps that are exposed he kills ninety-five per cent. I would not wish to say that I kill a hundred and one per cent., but I kill a hundred per cent. of such pulps. I believe it is better to attend to your own funeral, or the funeral of your own patient, than to let some one else do it. I believe that it is impossible for a pulp that has been exposed by decay to recover. I think we have good grounds for holding that position. When the pulp-membrane has been affected by decay and has become unhealthy, it cannot be brought to a sufficiently healthy condition to again perform its functions and bring the pulp back to a healthy condition.

In regard to the question, much mooted at one time, of capping, I think it has been so thoroughly tried and so thoroughly found wanting that it is not worthy even of a moment's consideration at this time.

Let us consider for a moment what we mean by an exposed pulp.

I am a little radical here. I believe that when a tooth is in such a condition of decay that the covering of dentine over the pulp is in a state of decomposition, when it is soft and will not bear the touch of an excavator without great pain, you have practically an exposed pulp. Miller has shown, and Dr. Black has shown very clearly, that you cannot by the application of sterilizing agents thoroughly sterilize that tissue, or rather that the chances are very meager of your being able to thoroughly sterilize it. You cannot remove it without making an actual exposure, and to leave it there is to leave an irritant. It is pretty well established also that decayed tissue is contagious, that if you do not remove all decaying tissue the degeneration will go on and will communicate the disease to healthy parts, and in a majority of cases death will follow. Death will follow usually with a great deal of pain. It is very mortifying to all of us, after having carefully labored for a long time to save a patient from pain and to preserve a pulp alive, to have the patient come back with an abscess, or the beginning of an abscess, and be obliged to acknowledge ourselves beaten. I believe, gentlemen, that it is good practice to work on the supposition that dead men tell no tales, and that it is best to be our own coroners. I think we should kill one hundred per cent. of exposed pulps, as well as some that are nearly exposed. That is a matter for our judgment. It is hard to lay down rules, and yet I own that in my office there are a good many rules.

Dr. Harker, in speaking of filling roots, cast a shadow upon the possibility of using a solid root-filling. Those of us who had the pleasure of hearing a compilation on this subject read by Dr. Ottolengui at Albany, or who have since read his paper, were possibly surprised to find that nearly all of the reputable dental practitioners who were called upon to express an opinion on this point had recourse to chloro-percha and gutta-percha as a favorite root-filling wherever it could be used. I believe it is good practice. I believe it has been thoroughly demonstrated that it is the best universal practice, and I mean by that the best method at present before the profession. It seems a little out of place here to go into my reasons for that opinion, but that opinion I am thoroughly established in, having followed that practice from its first introduction, and having been one of the first to take it up after it was publicly announced. Dr. Watkins called my attention to it, among others, when it was first spoken of, and I may say here that as yet I have no desire to change the practice.

The essayist also spoke of the use of sandarac and cotton. I want to speak of that here, because Dr. Miller in his recently published

work has gone, if anything, a little out of his way to lay stress upon the horrible condition of the mind of the man who dares to use sandarac and cotton as a root-filling ; he is extremely severe in his denunciation of the practice. Now I want to stand on the side of Dr. Harker on that point. Sandarac and cotton is a dressing that I have used for years, and used successfully. Dr. Miller says that in order to place such a dressing in a tooth it must be done with a sledge-hammer, I should judge ; that it must be forced down solidly upon the aching pulp, to the extreme agony of the patient. Now, while Dr. Miller, with his superior skill, succeeds in placing an oxyphosphate filling where he cannot put cotton and sandarac, I consider sandarac and cotton much better. It has the advantage of easy removal. We are often called upon to remove the dressing and put in a fresh dressing ; and oftentimes we find, to our disgust, that the tooth is extremely sore, that the inflammation has communicated itself to the surrounding tissue without having complete devitalization of the pulp, and the removal of an oxyphosphate filling at such a time would be far more inhuman than the placing of a sandarac-and-cotton dressing. So I want to indorse the treatment of Dr. Harker in his use of sandarac and cotton.

I also want to speak of his precaution not to place arsenic upon a tooth while it is in an irritated state. It is first-class practice. I believe that much of the complaint about subsequent pain from the application of arsenic arises from the fact that we have not brought the tooth to the condition where it was ready to receive such a high irritant as arsenic is ; we have not quieted the nerve. I believe that by a little precaution in making the application, and a little extra time spent in first giving your patient relief by using antiseptics, such as carbolic acid, then a local anesthetic, your patient is not only made much more comfortable, but in nine cases out of ten he will escape the pain so much dreaded in the application of arsenic.

Dr. Harker speaks of the use of the reamer. I believe in the use of the reamer very much as the gentleman who wrote to Dr. Ottolengui, —I use it where I have to. It has its place among the other instruments, and where it is really needed nothing will take its place. I believe we sometimes make a mistake in not using it, thereby leaving on the walls of the canal that we suppose have been thoroughly cleansed a lot of septic material that ought not to be there.

The essayist also speaks about leaving the tip of the nerve in the canal. I am sorry to have to differ from him on that point. He says that even if it is alive you can fill over it ; and if it is dead, you do

not know whether it is in a suppurative condition or not. While possibly it is mummified, it is so far beyond your sight and feeling that it is impossible to tell whether you have mummified it or not, and it is safer to remove it in time. I have recourse to the nerve-canal drier, which is a very useful instrument in my office for drying out pulp-canals and mummifying anything that may possibly be left in the canal of a tooth.

President Luckey. The paper is open now for general discussion, which will be limited to five minutes for each gentleman taking part.

Dr. Watkins. Mr. President, Dr. Harker reminds me somewhat of the young girl who marries the man she don't love for the sake of getting rid of him. I invited Dr. Harker last year to read a paper before our society, and through his diffidence he even went so far as to remain away from the meeting entirely, for fear he should be called upon to speak. That explains his diffidence in appearing before us this morning. I want to congratulate Dr. Harker now, and the society also, on the paper we have heard. I do not think he will ever have that kind of an excuse again for not appearing before a dental society. I also want to congratulate him on his courage in coming before a body like this and giving us a method of practice which he calls anti-conservative treatment of the exposed dental pulp. It requires a good deal of courage in a man to come before this body and advocate that treatment. Although we may thoroughly believe in it as used in our offices, yet there are very few who will get up in public and acknowledge it.

I want to ask Dr. Harker a question in regard to the use of campho-phenique with iodoform: whether, through chemical action, the iodoform deteriorates or not. In almost all combinations that I know of, iodoform deteriorates. The only combination I know of in which it does not deteriorate is that of carbolic acid. I have seen cases where iodoform combined with carbolic acid has remained in a tooth for several years, and when it was removed the iodoform was as fresh as it was when first applied. I think that when combined with creasote, oil of cloves, eucalyptus, and almost every other preparation, iodoform deteriorates and turns black.

I want to say a word in favor of iodoform. We have heard the opinion frequently expressed lately that iodoform is not an antiseptic. I believe Dr. Miller says that iodoform is not an antiseptic. Perhaps it is not; I don't know; but I can say that iodoform and carbolic acid will accomplish better results for me than any other antiseptic I have used. It is more reliable; when I use it I feel safe, and I cannot find anything to take its place.

In regard to drilling canals, Dr. Harker says that any canal which the broach can enter can be filled without drilling. I have to take issue with him on that one point. I find it very difficult to cleanse canals with the broach ; in fact, I shall acknowledge right here that I am not a good enough dentist to clean out root-canals without using a drill in most cases. I use a drill in almost every instance, and if I cannot get to the end of the canal with the drill, I get a good way toward it and make it easier to get there with the broach, and the drill so shapes the canal that I am sure the entire surface of it is finally filled.

Dr. Charles P. Lennox, Toronto, Canada. Mr. President and gentlemen, in connection with the subject of devitalizing pulps I have something new. It is known to many of the gentlemen present that I have been for some time experimenting with hot nitrous oxide. We sometimes meet with a pulp,—in the anterior teeth particularly ; it would be impossible to use my method in such a tooth as that, a model of which we have had exhibited here this morning ; but we sometimes meet with a case in the anterior teeth where it is difficult to retain arsenic for devitalizing ; and we often have to extirpate the pulp immediately in cases where the patient is leaving town, or for some reason cannot spare the time. We sometimes meet with a tooth that is so far destroyed that it is a difficult matter to retain a dressing. To meet those cases, I have been experimenting, and what I am going to tell you about now is simply an experiment. I use, to begin with, a solution of chloral hydrate, carbolic acid, and ether. The pulp being exposed, I saturate a bit of cotton with this solution, and place it upon the exposed pulp for a minute or two, and then, having my apparatus for heating the gas ready, I throw a jet of hot nitrous oxide gas directly upon the pulp. It may be supposed that this would be a very severe operation to the patient, but it is not. After holding it awhile, the pulp-cavity being accessible, I find that I can pass a small drill or broach to the end of the root, and remove the pulp ; and persons for whom I have operated tell me the pain is very slight indeed.

Dr. Edward C. Kirk. An eminent divine has said, "Orthodoxy is my doxy, heterodoxy is the other man's doxy," and in this view the general principles which have been brought out by Dr. Harker seem to me to be perfectly sound and orthodox doctrine. My experiences in treating the dental pulp have been so exactly similar to the experience of the essayist, that I think he is right.

I want to congratulate the society on the very modest and careful

presentment of the subject that he has made, and I want to further congratulate the society because I note that he has made no recommendation favoring devitalizing pulps by legislative enactment, which I think we might reasonably have expected from the character of your proceedings so far.

In regard to the filling of root-canals, I want to emphasize the statement made by Dr. Sanger, that the profession is in favor of solid root-canal fillings. My own practice for several years has been in the line of solid filling for root-canals, and for the past year I have adopted the plan of filling canals with chloro-percha and asbestos, which I find very satisfactory. This method has some features that are very desirable, and it fills the requirements of a good root-filling, especially for the upper teeth, better than any other that I know of.

As stated by Dr. Sanger, a majority of the gentlemen who replied to the circular letter sent out by Dr. Ottolengui, corresponding secretary of the New York State Dental Society, are in favor of the use of chloro-percha in some form. Most dentists object to the use of cotton as a vehicle. Now, in searching through the list of substances which might be suitable for use as a vehicle to carry the chloro-percha to the apex of the roots of upper teeth, I hit upon a special kind of asbestos known as Canadian asbestos. It is prepared by rubbing the fibers from the natural rock with the fingers, and is not ground or otherwise disintegrated. Its fiber is similar to that of silk, and is of a high tensile strength. A thread of this material, spun between the thumb and fingers from the bunch of the fibers, and saturated with chloro-percha, and then carried to the apex of the root, in the same manner that cotton is carried, and carefully packed to place, makes a very solid and impervious filling. Two years ago, at a meeting of the New York State Society, I advocated the addition of ten per cent. of aristol to the chloro-percha, and I think it is a desirable addition. My experience bears me out that it is a well-chosen antiseptic.

I am glad to hear the remarks made by Dr. Lennox, because I have been making some experiments for the treatment of sensitive dentine with the apparatus he has spoken of. I experimented for some two or three weeks with the apparatus, and I was very much gratified with it; it is exceedingly desirable as a drier, as well as an obtunder.

I should like to have Dr. Lennox state his opinion as to whether the nitrous-oxide gas has any properties which make it more valuable as an obtunder than other gases; whether he attributes the obtunding effect to the general anesthetic quality of the gas, or whether any dry gas would have the same effect, as, for instance, hot air, hydrogen, or

oxygen. In other words, does he attribute the obtunding property to the anesthetic effect of the gas itself, or is it simply the effect of drying the tissue? However that may be, I must say that nitrous-oxide gas, heated and used in the manner that has been described, has been one of the most satisfactory obtunders that I have ever used. It acts very rapidly.

There are some gentlemen here who have made use of hot air as a drier, and they ought to be able to tell us something about this subject.

Dr. Lennox. As to the anesthetic properties of the gas, I cannot speak. I have not experimented with hot air, but I believe Dr. Guilford has, who is present. I have used nitrous oxide simply because it is easy to obtain, and you get a power from it that you want, and it is very inexpensive used in that way. The results obtained with it seem to satisfy me; but whether that effect comes from the anesthetic properties of the gas or not, I cannot say. It is possible that hot air, or other gases used in the same way, might have the same effect; but nitrous oxide seems to accomplish the object to a degree that is very satisfactory to myself and to many others who have used it. I have a hundred-gallon cylinder, and I have used it on an average daily since about the 10th of March, and still have plenty of gas on hand to use; so you see it is inexpensive, and the force of the gas is something that we want. We need that force, and in this way we get it cheaply. I am inclined to believe that this method is more efficacious than any other style in use.

Dr. Kirk. I would be very glad to hear Dr. Darby on this question before the subject is passed. I think it is an important one.

Dr. E. T. Darby. I have not used hot air in just the method that Dr. Kirk has suggested, although I have for years used hot air for drying cavities, so my experience in devitalizing the pulp, or obtunding, after this method, would be of no value.

I would like to ask the President of the Pennsylvania Society to say something in reference to the conservative treatment of the pulp. That treatment of the pulp has had a black eye this morning, in the paper which has been read. While I can speak only in words of the highest commendation of the modest manner in which the subject has been presented by the essayist, there is a great deal in the paper to which we have listened that I should take most decided exception to. It is known to some of you that I have been for years in favor of the conservative treatment of the pulp. I have practiced it successfully in a great many instances. It is true that the ratio of my successes

during the past four or six or eight years has not been as great as it was in former years. Why that is I cannot say, but I think I can state truthfully that years ago I saved at least ninety per cent., if not ninety-five per cent., of recent exposures, primary exposures, where the pulp was exposed in excavating, or where decomposed bone was lifted off the surface of the pulp, and there was no special disturbance of the pulp. I have seen those pulps years after, and found them thoroughly vital and thoroughly healthful. I recollect a case that I have perhaps mentioned before some of you, that of a naval officer for whom I capped a pulp that was exposed on the buccal or the approximal surface. He went away after the operation, and when he returned, in about three years, the pulp was exposed upon another surface. It was healthy and normal. I capped it again. He returned in six or eight years, with the pulp exposed for the third time, and I capped it the third time. I have seen it since, and it is now living. There were three exposures capped, and the tooth is thoroughly vital to-day.

Another case I recall, where six pulps were capped in a single mouth, more than twenty years ago. I have seen those teeth at intervals of six months or a year for twenty years, and I know that all of them are vital, living, healthful teeth.

I would like to have Dr. Jack tell us his experience in this matter.

Dr. Jack. Mr. President and gentlemen, I am not disposed to say anything upon this subject this morning. I could not say anything upon it that would be of much service to you, but I want to say this to you: that notwithstanding the paper that has been read this morning, so far as it applies to conditions of the pulp that have not passed into the stage which I have called the third or objective stage, where there is disturbance of the pulp, I am not ready to abandon conservative treatment. If conservative treatment be applied to those conditions of the pulp where disturbance does not exist, or where it has not passed into the objective stage, I have believed that we may confidently expect success from the treatment, and I have no reason to change my views upon it. I might say to you that even with the most carefully selected instruments and the greatest care, there naturally will be failures due to constitutional conditions, or perhaps to a septic condition of the dentine which has been overlooked or not counteracted. I attribute a large percentage of such failures to previous objective conditions or systemic states of the patient unfavorable to that kind of treatment, or the presence of septic matter of some form or other in the dentine.

Dr. Stellwagen. Mr. President, if I am not out of order I would like to invite the attention of the gentlemen present who are interested in the treatment of pulps or pulp-canals to a little matter that I happened upon rather indifferently, but which has been very useful to me. I found great difficulty in removing the *débris* from canals and cleansing them, and I hit upon a plan of keeping my bottles of carbolic acid and alcohol constantly on hand, with a dozen or so of selected Japanese tooth-picks in them; and when I want to cleanse out a cavity or canal I simply put in one little tooth-pick after another, throwing them away when used. In half the time that it ordinarily takes to clean out a cavity, it can be done with these tooth-picks used in that way. They become very flexible when saturated with carbolic acid and alcohol. I have had so much comfort and satisfaction in this method, that it suggested itself to me to ask others to try it.

Dr. Harker. Mr. President, Dr. Watkins's question seems to make it necessary for me to get on my feet again, which I thought I would escape. I do not know that I can say anything more than I have already said, without repeating. You will, I think, understand me when I say that I cast a shadow upon the filling of root-canals with a solid filling. I spoke in that connection of the treatment of my own teeth by Dr. Brown, and I say they remained comfortable for twelve years. Being opened, they were found decayed, and it became necessary in that case to remove; but without that they would undoubtedly have remained comfortable. Some probing was done, and a little irritation caused thereby.

My method is to fill root-canals with a cone of gutta-percha formed to fit the canal, first having passed a broach to the apex, which broach carries a mixture of campho-phenique, iodoform, and hydrogen dioxide. I then dry the cavity with absorbent cotton, and introduce my cone of gutta-percha to the apex.

I did intend to present to the association a drawing of a section of a tooth showing how the preparation was introduced, and how the healing process, after the detached portion of the pulp was removed, was brought about. You misunderstand me in regard to leaving the tip portion of the pulp in the canal. I stated that where it was impossible to remove the tip portion of the pulp on account of obstructions, no harm would probably come from leaving it when it was well touched with the sterilizing mixture. Dr. Sanger is excusable in not having an opportunity to use it.

I can hardly answer the question that Dr. Watkins asked. The cases in which I have used this treatment (campho-phenique with

iodoform) have not given me the opportunity of examining the territories after filling. I said that not in one per cent. of the cases had there been sufficient irritation to necessitate the removal of the permanent filling, and that in those cases in which it had been necessary they were readily restored to health and usefulness. The action, however, of this combination seems to me to be very much like the action of carbolic acid and iodoform,—in fact, I can see no difference. As I stated, I leave the pulp in the canals until nature has decided how much it shall give up, and I then remove it. I find the pulp in a condition that is perfectly free from septic appearances or taint. I have used campho-phenique for about two years. I use it for the reason that I believe it dissolves the iodoform more rapidly.

On motion of Dr. Bassett, the subject was passed.

Dr. Bassett. Mr. President, you have on the program a very interesting paper by Dr. Guilford. We cannot do justice to it at this session, and I therefore move that the reading and consideration of that paper be postponed to the evening session.

Dr. Bassett's motion was carried.

Dr. Guilford. Mr. President, I prepared the paper with the view of giving a clinic on the subject after it. The clinic should really follow the paper, because the clinic was intended to illustrate what I said in the paper; but the clinic is to be this afternoon. At the same time arrangements have been made to hold the clinic in this room, I believe, instead of down-stairs. It is not an operation to show skill or display any particular rapidity of operating, but simply to show the different degrees of cohesiveness of gold, and how to use it.

Adjourned to 8 o'clock P.M.

FRIDAY EVENING SESSION, JULY 22.

President Louis Jack, of the Pennsylvania Society, presiding.

President Jack. Gentlemen, the first proceeding will be the reading of Dr. Guilford's paper.

Dr. S. H. Guilford read a paper entitled,—

THE COHESIVE PROPERTY OF GOLD: ITS CHARACTER, VALUE, AND AVAILABILITY.

Gold is one of a small group of metals which from the earliest days of metallurgic science, or even of alchemy (which was unscientific experiment), have been designated "noble" metals. They received

this appellation from the fact that while they united more or less freely with other metals they were very slow to combine with non-metallic substances, and hence were always found native or in a metallic state. But while thus found, gold at least is never found pure. Its most common associate is silver, although other metals, such as tellurium, bismuth, lead, etc., are often found in combination with it in minute quantities. In this is constituted the difference between native gold and virgin gold; the former is always more or less alloyed as found, while the latter is gold that has been made pure by chemical action.

Gold, while possessing most of the physical characteristics common to metals, possesses certain ones in a very marked degree. Among these may be mentioned especially malleability and ductility. In the former it stands preëminent, while in the latter it is excelled by but one or two metals. Its possession of these two properties in so great a degree renders it useful above all other metals for dental manipulation, while its further property of insolubility in any of the pure acids, whether vegetable or mineral, makes it especially suitable to be placed in the human mouth.

Another property which it possesses to a remarkable extent is softness, although this is implied by the previously mentioned properties, for no metal could be malleable and ductile to the extent that gold is without being exceedingly soft.

Lead is softer than gold in that it retains its softness under continued beating, while gold, similarly treated, becomes stiff and hard; but gold is far more ductile than lead.

Malleability and ductility are in all cases due to and dependent upon cohesion, which may be defined as that force which binds and holds together the ultimate constituents or particles of any solid.

Gold in its pure state possesses this property to such an extent that two masses of it under suitable conditions may be as perfectly united in their cold state as they could be if fused by the aid of heat.

If two sheets of pure gold of moderate thickness, with perfectly clean surfaces, be laid one upon the other and passed between the rolls of a rolling-mill, they will become so thoroughly united that no amount of force can separate them. The same result will take place between a sheet of pure gold and one of pure platinum under the same conditions. It is in this way that the crown-metal so largely used to-day in the construction of crown- and bridge-work is produced.

So, too, in the process known as fiber-plating, for the production of filaments from which gold lace is woven, a rod of silver is gilded by simply burnishing leaves of pure gold upon it. It is then drawn into

wire so fine that a length of it extending a mile and a quarter will weigh but one ounce.

How is this perfect union brought about? Either one of two theories will account for it. One, the molecular theory, holds that while the attraction of cohesion operates upon all solid bodies, its operation is only sensible at insensible distances. When, therefore, the molecules of the same body, or of two similar bodies, are brought within the sphere of this attraction, cohesion takes place.

The other, which for want of a better name we may call the dynamic theory, holds that the molecules of a mass or masses of matter are held together by being interlocked with one another, either naturally or by being compelled to assume such a relation under the influence of pressure.

It would seem as though, in the instances cited, both the molecular and dynamic forces operated to produce the result, for union between the metals will not take place unless they are brought into the closest possible apposition, nor will it result if the metals have been hammered or rolled and not subsequently annealed. When a nugget or ingot of gold is subjected to pressure its bulk is sensibly reduced, but when heated to a point slightly below fusion its original dimensions are restored.

This latter process is known as annealing. So, also, when a mass of gold is beaten or rolled it assumes a condition of stiffness and intractability, but its original softness and plasticity are completely restored by annealing. These changes in the mass are explained by the universally conceded fact, that under the influence of pressure the molecules are driven into closer proximity than is natural to them, and that heat, by expanding the mass, allows the particles to move slightly among themselves, and resume, as nearly as may be, their former relations to one another.

Gold, after being beaten into foil, is always annealed in order to restore to it the softness which has been lost in the process of hammering. It also restores its cohesiveness. When it is desired to modify this cohesiveness the foil is simply exposed to the air for a time, and thus converted into the quality known to us as semi-cohesive. During such exposure the gold probably attracts and attaches to itself minute particles of matter, which are always found floating in the air. It is also probable that there is a condensation upon its surface of certain adventitious gases and vapors. In this way the surface becomes coated with a layer of foreign substances which modifies, and would in time entirely destroy, its natural property of cohesion.

Some manufacturers of gold foil have a method of rendering it non-cohesive without exposure, and claim that, while in this condition it is as pure as the cohesive, it cannot, like other preparations of foil, be made cohesive by annealing.

The process of imparting this property to pure gold is kept a secret by the few who understand it. Truly non-cohesive gold possesses the quality of softness or pliability in a remarkable degree. This it could not have without the final annealing after beating, which, in restoring the softness, would also reestablish its cohesiveness. It is therefore reasonable to suppose that it is again deprived of its cohesiveness by some subsequent treatment that causes its surface to be overlaid with a film of such character as not to be readily dispelled or driven off by heat. Treating it with a solution of ferrous sulphate, or exposing it to the vapors of sulphur or phosphorus, would probably produce this result, but just what process is employed we cannot say. That the treatment employed in rendering foil non-cohesive is surface treatment is shown by the fact that when two superimposed sheets of this gold are cut through with a shears, the newly-cut edges unite much in the same manner as cohesive gold.

The writer has seen a cavity filled with non-cohesive gold by pricking it in with two cambric needles set in wooden handles. The filling when completed was dense, and the layers of foil were so well united that they could not be separated. While nominally a non-cohesive filling, the layers were really held together by pure cohesion at the point where they were pricked, for the needle, in penetrating two or more layers at a time, exposed the central cohesive portion of the layers at the point of puncture, and brought them into direct contact, resulting in union. Further evidence that non-cohesive foil has had its peculiar property imparted to it by contamination with other metallic substances is furnished by melting in the flame of an alcohol lamp a rope of cohesive and one of non-cohesive foil. The globule resulting from the cohesive foil will be bright and clean, while that from the non-cohesive will be tarnished or oxidized, clearly showing the presence of extraneous matter.

I have here in small vials globules of gold obtained by melting ropes of foil in a Bunsen flame, and catching the globules upon a glass slab as they fell. It will be noticed that those labeled non-cohesive are of a decidedly darker or duller color than the others which were obtained from cohesive and semi-cohesive foil of various makes. One vial, marked "X, non-cohesive," contains globules obtained from a so-called non-cohesive gold; but this make of gold, while professedly

non-cohesive, is not strictly so, because moderate heat readily imparts to it the cohesive quality. The globules in this case are nearly or quite as free from oxidation as those obtained from cohesive foil, showing little, if any, surface contamination.

Non-cohesive gold has for many years been sold and used under the less distinctive name of soft gold. The latter term, however, is a misnomer, for, as we have stated, all pure gold is soft unless this property has been interfered with by hammering or rolling. No foil can possibly be softer than cohesive foil, but the misuse of the term soft has arisen from the fact that in the manipulation of non-cohesive foil the layers will slide over one another without cohering, which seems to emphasize or exaggerate the impression of softness. The absence of this sliding or gliding quality in cohesive foil naturally but improperly suggests the idea of hardness. In large and accessible cavities, where no necessity exists for the sliding of gold upon gold, cohesive foil will be found to be equally as soft and tractable as the non-cohesive variety.

Each kind has its special advantages as well as its definite limitations of usefulness, and harm can only result in the ignorance or violation of the conditions under which each should be used.

The benefit conferred by the discovery of the availability of the cohesive property of gold foil in dental operations can scarcely be overestimated, for while the ravages of caries were checked in a very efficient manner by the use of non-cohesive foil, that higher and nobler fulfillment of our art in the perfect restoration of lost tissue could not have been obtained without the advantage of the cohesive property. By the former method, operations could only be performed in simple cavities, and where compound cavities presented, the chisel and file were called into requisition to reduce them to simple ones. In this way not only were the natural forms of the teeth destroyed, but the amount of masticating surface reduced and much discomfort entailed. With the cohesive property of foil intelligently employed, as it is to-day, all these disadvantages are removed and the liability to recurrence of decay greatly lessened.

The history of the development of cohesive gold filling has been similar to that of many other valuable methods and processes. At first its advantages alone were seen, and not only seen but exaggerated. A quality good in itself was naturally supposed to be good under every and all conditions, and its indiscriminate employment without recognition of its limitations resulted in many failures and brought it into disrepute.

The imperfect method of its manufacture and the unintelligent manner of its employment, due to ignorance of its peculiar properties and inexperience in its use, both combined to bring about the unfortunate results with which its earlier use was attended.

Each year, however, has witnessed improvement in quality as well as better methods and more suitable instruments for its manipulation, so that at the present time there are fewer failures attending its use and little excuse for those that do occur.

Used with an intelligent recognition of its peculiar properties, and under conditions in harmony with them, it has become one of our most useful servants.

In considering its value and availability, it becomes necessary to notice certain practical points both in regard to its properties and manipulation.

The term cohesive, applied as it usually is in a general way, is not sufficiently distinctive to describe the different grades of this kind of foil in use to-day. As now manufactured, we have the moderately cohesive, better known as semi-cohesive; the regular or ordinary cohesive; and the extra-cohesive, each differing from the others in important particulars. The former, for instance, would not be sufficiently cohesive to be used upon the surface, while the latter would be too intractable to be used anywhere but on the surface or in very large and exposed cavities.

For many years after its introduction cohesive foil was used in its most cohesive condition; in small cavities as well as large, in inaccessible as well as accessible ones, and at the base as well as the surface. Such use was in a large measure misuse, and the many failures that followed led in time to a better understanding of its limitations. Seeing that failure occurred where it only could occur in a cohesive filling, along the line of contact between gold and tooth-substance, especially at the cervical margin, it was suggested, and came to be part of the practice with many, to line some part or all of the walls of the cavity with the more adaptable non-cohesive foil, and restrict the use of the cohesive to the body and surface of the filling. The combination of the two kinds of foil in this way, using each in accordance with its peculiar advantages, resulted in a great improvement in the quality of the work produced.

With but the two kinds of foil, the strictly cohesive and the strictly non-cohesive, to choose between, such combination of the two was most wise, and continues to be considered excellent practice. One difficulty attending the method was that of manipulation, for it re-

quired considerable skill to combine the two without disturbing their relative positions; while another was that in those cases where it might become necessary, cohesive gold could not be readily added by the welding process to the non-cohesive.

With the introduction of the semi-cohesive variety an advancement was made, for it possesses the ability to be adapted to any surface as thoroughly and accurately as the non-cohesive, and also to have the quality of cohesiveness imparted to it, when needed, by the application of slight heat. In this way the one variety of gold becomes available for use in place of two varieties.

While the manufacturer to-day produces cohesive foil of a far better quality than he did twenty years ago, it is still defective, as a rule, in that the annealing is carried to too great a degree, thus rendering the foil less tractable than it should be. For this reason the dentist who makes large use of cohesive foil generally prefers to buy that which is only slightly cohesive, and to render it more so, when desired, by annealing it himself at the time of using. Experience has shown that the quality of cohesiveness can be imparted to foil more delicately and with a wider range of degree by the dentist than the manufacturer, for he can vary it according to his needs.

There is a point in the process of annealing, well known to the experienced, which gives to the gold sufficient cohesiveness for all purposes without lessening its adaptability, whereas if carried beyond this point its best qualities are impaired. Careful and proper annealing, therefore, is one of the most important considerations in the manipulation of cohesive foil.

The extent to which annealing may be advantageously carried depends on the thickness of the foil and the manner in which it is to be applied. In the heaviest grades of rolled gold intended to be used upon or near the surface, or, for that matter, where the entire filling is to be made from it in large and very accessible cavities, the gold may be heated to a dull red color, and the greatest degree of cohesion thus imparted to it without interference with its working properties, for it is intended that it shall be laid layer by layer in a comparatively even and regular manner.

With the lighter grades of foil, prepared in the form of twisted ropes or folded ribbons, for use in less exposed cavities and throughout the filling where the same evenness of surface cannot be maintained, so great a degree of annealing would seriously interfere with the proper working of the foil, without conferring any real advantage. It has therefore been found best to give to the lighter foil, which is used

throughout the body of an ordinary filling, only a slight degree of cohesiveness, reserving the greater degree for surface work where more perfect cohesion is required. The semi-cohesive variety of foil, which does not unite upon casual contact, but will allow one surface to glide over another without interference, and which only becomes united under pressure, is the kind best adapted for the main portion of all ordinary or medium-sized fillings. When nearing the surface, the same gold slightly annealed will give to the filling that uniformity of texture and density so necessary to usefulness.

As to the manner of annealing foil, various practices prevail ; some passing the foil through or near the naked flame, while others, preferring not to expose the gold thus to the products of combustion, heat it upon a tray of metal or mica held over the flame. The latter would seem to be the better way of avoiding over-heating, but experience shows that equally good results follow the use of the former method, provided proper care be taken. To avoid over-heating by this method with the lighter grade of foils, as well as to attain the proper degree of cohesiveness without harshness, the gold should never come in direct contact with the flame, but be passed quickly just above it. There seems to be no preference between the use of alcohol or illuminating gas for annealing, provided the latter is used in connection with a Bunsen burner, affording perfect combustion.

One interesting fact remains to be mentioned in connection with the subject of annealing. For years it has been generally claimed and believed that the so-called strictly non-cohesive variety of gold could not be rendered cohesive by annealing, but the writer has recently satisfied himself by experiment of the fallacy of the idea. Annealing it in an alcohol flame of moderate size does not materially change its quality of non-cohesiveness, but when heated to redness in the larger flame of a Bunsen burner its condition becomes so greatly changed that it can be as readily and perfectly welded as cohesive gold. Treated in this way, however, it differs from the ordinary cohesive gold in the fact that pieces coming into slight contact do not cohere, and mallet-force in some form is necessary to bring about the desired union.

Another very important feature to be considered is that of the form and character of the points used in the condensation of cohesive foil. If gold is torn or lacerated in the course of introduction, additional labor and time will have to be expended in again bringing the severed portions into absolute union. It is therefore the part of wisdom to avoid such severance. This can only be done by using points with the

finest and most delicate serrations upon their surface, and that are free from any sharp angles. In addition to this, the face of the instrument should be of such size as to cover considerable surface, and thus avoid piercing the different layers. As we have already shown, cohesion takes place most readily and perfectly when the surfaces of the different layers are brought into absolute contact at all points. This is best accomplished by keeping the surface of the filling as nearly uniformly even as possible, and broad-faced instruments should be used for this purpose.

Instrument points with just sufficient convexity to avoid flatness, and with distinctly rounded edges, will produce better results than any others in welding gold.

Fine serrations, while they are unobjectionable and produce good results in connection with slow malleting, where rapid malleting can be employed, as with the mechanical or electric mallet, even more perfect results are obtained by the use of smooth points, or those with but the faintest trace of roughness upon them. Points of this character, of as large size as can be conveniently employed, used in connection with cohesive gold of any form, will produce a filling so compact and homogeneous that it will never scale or pit, but always preserve the perfect surface given to it at the time of finishing. A filling of this character will have not only the appearance but the essential qualities of a mass of cast gold.

The pitting and scaling of cohesive-foil fillings which have at times filled the heart of the ambitious young operator with dismay, and have been the cause of much of the opprobrium that has been cast upon the employment of cohesive gold, are attributable to one or more of three causes : too great cohesiveness of the gold ; deep serrations and finely pointed instruments ; and the use of foil so thin and delicate as to be readily torn and comminuted. Foil of greater tenuity than No. 4, as furnished under the names of corrugated, velvet, and the usual form of Wolrab gold, can only be safely manipulated in mass in the form of cylinders, mats, or rolls, and then only in connection with broad and finely serrated instruments employed with the greatest care to prevent laceration.

The recent revival of the manufacture and use of the form of gold known as crystal, mat, or plastic gold calls for some notice of this variety before leaving our subject. The use of this form of gold for the filling of teeth dates back some thirty or forty years, and has from time to time found much favor with the profession. Its general use has not been continuous like that of foil, but it has periodically

claimed attention and received recognition of its value according as some new process of manufacture or convenience of form has again brought it to the notice of the profession.

Gold thus prepared by a chemical decomposition and subsequent deposition, whether by the usual chemical processes or by electrolysis, appears as a brown powder, and consists entirely of a mass of crystals lightly interlocked. When in this condition, unlike crystalline masses of most metals, it is capable of being compressed into a perfectly solid and homogeneous mass without the aid of heat. Its purity, as well as its extreme cohesiveness and softness of texture, were naturally such as to commend it to our use for the filling of teeth. Such being the case, why has it failed to permanently hold its place among the forms of gold in general use? The answer is easily given. The very qualities which made it valuable led to its abuse. The ease with which it could be placed and packed in position, added to its extra cohesiveness, invited carelessness and led to failure.

Each generation of dentists has been fascinated by its attractive qualities, used it more or less extensively, met with failures, and abandoned it, only to have the same course repeated by the generation following. It has always possessed the good qualities attributed to it, and the best results have been and can be obtained with it when its peculiar properties are thoroughly understood, and when experience in its manipulation has led to overcoming the difficulties attending its use. In its loose and cohesive condition it is not only easily comminuted, but it also so readily coheres with similar masses upon mere contact that spaces are often unconsciously bridged over by it, and the resulting filling, though seemingly compact and homogeneous, is really more or less porous, and hence faulty.

On account of its extreme delicacy and tenderness, success in its use requires that it be most carefully handled and compacted with broad-faced instruments, and that mallet-force for its further condensation be not applied until each piece has been well tamped into position by hand pressure. It is further necessary that each portion be carefully and exactly placed, for once in contact its cohesiveness will prevent even the slightest change.

To manipulate it according to these conditions requires the expenditure of more time and the exercise of greater care than any other form of gold, and for these reasons its use has from time to time been abandoned by the busy practitioner.

In conclusion, we may be allowed to express the opinion that in spite of its many good qualities its employment by the inexperienced

is always attended with danger, and that all in all, in a practical way, it possesses no advantage over the many other forms of cohesive gold now in use.

President Jack. We will now listen to the reply of Dr. Osmun, of Newark.

DISCUSSION.

Dr. J. Allen Osmun. The paper to which we have had the pleasure of listening is on a very interesting subject,—one that touches us in a very practical manner.

On our conceptions and the correct practice of the principles enunciated depends much of our success in the daily operations we make. If we fail to grasp the fundamental principles affecting the availability as well as the limitations in the use of gold as a filling-material, then failure must be the inevitable result.

Commencing with the source and the preparation of gold for dental use, and the theories extant concerning cohesion, Dr. Guilford has grouped and placed together these well-known facts in a manner helpful to a full comprehension of the subject.

It does seem necessary to repeat again and again any theory or practice in order to make an impression upon the mind or to secure its adoption.

Passing over the opening paragraphs of the paper without further comment, we will consider somewhat in detail the more practical ideas which the paper contains.

It seems to be the object of the writer to demonstrate the usefulness and desirability of the various preparations of gold, and its limitations as well as the adaptability in the various conditions we are called upon to meet.

He has given us a very clear history of non-cohesive foil and its peculiar properties, and emphasized its adaptability to the walls of the cavity. It is this quality that is the great object to be attained in all filling-materials. If we fail to get perfect adaptation, the whole operation results in failure. The use of non-cohesive foil, as used in the past, necessitated great loss of tooth-substance; yet in many cases teeth were preserved in a marvelous manner. I have seen fillings of non-cohesive foil that have stood the test of many years,—in one case about fifty.

The next point brought out in the paper is the history of the use

of cohesive foil, and it is shown very clearly how the good qualities of this filling-material have been abused, and how in its use the very fundamental principles of successful filling have been violated and its limitations entirely forgotten. As it is quite possible that this point has not impressed itself on your minds, in the somewhat hurried reading of the paper, I will trespass on your patience a moment to emphasize it. I am not an advocate of non-cohesive foil for universal work, but am a firm believer in the value and usefulness of semi-cohesive gold which is soft, and used as semi-cohesive or cohesive as I wish and the exigencies of the case demand. Many of the failures in gold fillings which I have seen can be traced to the employment of gold made too cohesive and the failure to get perfect adaptation to the walls of the cavity. I think that an inquiry in this direction will show not so much fault in the preparation of the cavity, of which we hear so much, but in nearly all the cases it will be found that the cause was in not having the gold in perfect adaptation. I am reminded of a story I once heard, of a fellow who endeavored to make a postage-stamp stick on an envelope. After many trials it at last stuck a little; he seemed fearful that it would not remain until the journey's end, and so he took his pen and wrote under the stamp, "Paid if the d—— thing sticks."

This seems to be about the idea of some operators; if the filling sticks, then they consider it a big success. The writer of the paper evidently does not think this quality the only desirable one.

The point made about annealing I consider important. I believe the only way to anneal gold to meet the various requirements of any case we may have in hand is to anneal by the flame, and as we desire to use it; thus we can practically have non-cohesive or soft, semi-cohesive, and cohesive, as required. For finishing fillings so as to have a hard surface which will take a high polish, by using heavy rolled gold, Nos. 30, 60, or heavier, and annealing to a cherry red, you will produce a filling which will retain a high polish and will not pit.

So far it has seemed that there was only an indorsement of the paper, but we now come to a point where I am compelled to differ very materially from the conclusions of the writer. In speaking of the forms and character of the points used in condensing cohesive foil, he says in substance that the points should be of good size. I take it he means quite large ones. If this be so, I must dissent from his decision. I believe that gold can be more effectually condensed and placed in closer contact with the walls of the cavity by the use of medium or small points than by the use of large ones. I must

enter a protest against the use of foot-pluggers. I am convinced that the extensive use of this style of plugger has been the cause of more failures in gold fillings than in any other one that can be named, not excepting the improper shaping of the cavity. I will admit that a few can produce good results by their use; but it is not the few that we should consider, but the great majority of operators, especially the men who find it easy to use large masses of gold, foot-pluggers, and strive thus to attain speed rather than thoroughness.

The point made of having slight and delicate serrations I am fully in accord with, and believe this is a valuable suggestion, and worthy of more than a passing notice.

The essayist calls attention to pitting and scaling of gold fillings, and attributes it to one or more of three causes:

"The deep serrations and finely pointed instruments, and the use of foil so thin and delicate as to be readily torn." I am inclined to think that this condition is due rather to lack of thorough condensing, because if thoroughly condensed it would make no difference how thin the foil or how small the point used in condensing the filling.

Now a word respecting the revival of the use of crystal mat or plastic gold spoken of in the paper. The doctor has so ably put this part of the subject to you, in such a lucid and comprehensive manner, that it will only be necessary to emphasize a point or two.

I am convinced by personal use and by observation that the cause of the many failures in the use of this style of gold is attributable almost, if not entirely, to its great cohesiveness, and the absence spoken of by the essayist of that quality, so desirable, of the sliding or slipping property observed in semi-cohesive or the non-cohesive variety of gold foil, which allows of a close conformity to all of the inequalities of the cavity-wall, and produces a perfect joint between tooth-substance and filling-material. This has been accomplished by many operators, who have produced beautiful work by the use of crystal gold. One operator, now deceased, Dr. Cosad, late of Jersey City, who used this style of gold almost exclusively in his practice, produced some of the most beautiful and durable fillings I have ever seen. I have recently seen some which have been in service for nearly seventeen years, that are marvels of perfect workmanship. After all, it is a question of skill rather than of material.

The object we all should strive for is to be equally skillful in the use of all the various styles of gold, and by a diversified practice we can then best meet, in a scientific and skillful manner, all the

various conditions we are called upon to treat ; and nothing less than this should ever satisfy any operator.

Personally, I am indebted to Dr. Guilford for his admirable paper, and think we all will have many valuable thoughts to take home with us from having had the pleasure of hearing him.

President Jack. Gentlemen, I am informed that Dr. Darby has been obliged to leave us, and that he has left with Dr. McQuillen some statement to be presented to you. I will now call upon Dr. McQuillen.

Dr. D. N. McQuillen. Gentlemen, Dr. Darby simply wanted me to present two teeth which he has filled ; one with Morgan & Hastings's soft foil, folded, and packed with hand pressure, the last pieces being slightly heated. It is not shown as an exhibition of skill, but to show how hard a filling can be made with soft foil. The other filling contains five sheets of No. 4 old-fashioned soft gold ; or five sheets were made into twenty-six cylinders, and twenty-three of them were used, set on end. The time of packing the gold was six minutes.

President Jack. I will request Dr. Magill to open the discussion for the Pennsylvania Society.

Dr. W. E. Magill. I feel very regretful, gentlemen, that Dr. Darby is not able to be here. I do not feel competent to open this discussion. I do not know very much about this subject ; but I know that it was a very interesting period in dental practice when the change was made from using non-cohesive gold to the cohesive form. In the earlier stages of my practice we had no choice, except between non-cohesive gold and tin foil. It was then considered unprofessional to use what was then called succedaneum, now known as amalgam, which was only used by itinerants. They traveled through the country, stopping here and there, and their use of it gave it its reputation. They had a way of finding large names, and I remember that succedaneum was the name they gave to what we now know as amalgam.

The principle on which we filled teeth then was entirely different from that now taught in the schools. If we had a grinding-surface cavity, it was filled on the same principle either with tin or with gold. We made ropes of the foil and folded them into the cavity, leaving a portion of the rope projecting out of the cavity for subsequent condensation ; and we worked it in that way until the cavity was well filled ; we then condensed and finished up the margins. But the final condensation was not made with the mallet until Dr. Atkinson introduced its use, but was done with heavy hand-pressure and a large-

faced instrument. There was a great deal of muscular effort used at that time in filling a tooth. When we came to approximal cavities, the greatest skill of the dentist was called for. We were sometimes very badly troubled to retain the gold where the cavity was somewhat shallow. The dentist of that day had no idea of retaining-points, and indeed they would not amount to much with non-cohesive foil ; but he did groove somewhat the buccal and lingual walls, rarely changing the form of approximal cavities at grinding-surface for the purpose of dovetailing them. He commenced at the bottom of the cavity, and packed in such large folds of foil that they would not escape him, using two instruments, one to steady the earlier-placed pieces of foil until he had them tied, and another to carry the foil. After placing the gold at one side, he carried other folds down on the side, and ultimately divided those, driving the outer and inner portions apart, as with a wedge, and then finishing in the center. There were a few men who prided themselves upon grinding-surface fillings by this process : they packed their gold reasonably well by hand, and then drove some little pointed pieces of gold wire into the center of the filling, expecting by that wedging process to get a more compact filling. It was the final packing and condensation of the filling that the dentist relied upon.

It was a great comfort to the average dentist of that day to have a soft foil having little cohesion, and tin foil came to be much used. Tin foil came to have the reputation of being a chemical tooth-preserver, the idea being that there were certain qualities in the tin foil itself which tended to arrest decay. From the mechanical qualities of the foil it packed tighter under pressure ; and when we took one of those tin-foil fillings out of a tooth it was very clean and nice, and we did not find much decay following it.

Dr. Guilford has gone somewhat into the principle connected with filling. Perhaps for our general guidance it would be better to adopt the principle that two plane surfaces most easily cohere. I think that when we twist foil we interfere with its ready condensation. Where Dr. Guilford spoke of No. 30 foil and the higher numbers, he was not careful enough to guard against the liability of cramming. If you are not careful to keep up the even surface, then you are sure to produce faults that you cannot remedy.

I do not agree with the last speaker in regard to the cause of the defects of sponge gold. Sponge, or crystal gold, as it was introduced in the earlier days, seemed to be a very beautiful preparation. It was of very high cohesion, and it did make hard fillings, though it

did make very faulty fillings : very nice on the surface, but imperfect underneath. The high hopes that were entertained in regard to it were dashed. The apparent disintegration of such fillings was so frequent that sponge gold had a very short life. This gentleman of whom mention was made as doing such fine work (Dr. Cosad) had one quality which has not been recognized ; he had intense patience. If gold of that class is to be used, it should not be used in large masses, and not with large instruments. The principle consists in the use of very minute portions of the gold, and it requires great patience in packing it. As soon as that kind of gold is used in large quantities, the fillings will be of no value ; and if any gold is not used with patient labor and nice manipulation, just so surely will good work not be done. So I think we should give all honor to the man who makes good fillings with crystal gold. That good work represents the patience, energy, and honesty of purpose and integrity that is inside of the man who does it. I think it has been truly said that common sense is the best material to use in our operations, but I also think that integrity of purpose and a determination to make good work is worth everything.

Dr. Osmun. I would like to ask Dr. Magill if he was personally acquainted with Dr. Cosad.

Dr. Magill. No, sir.

Dr. Osmun. I want to say that Dr. Magill has described Dr. Cosad perfectly.

President Jack. The paper will now be discussed under the five-minute rule.

Dr. Thomas C. Stellwagen. Mr. President, the paper we have heard to-night contains so few points that we can take exception to, that it does not invite much discussion ; but there are two points which I think may admit of further investigation. One is where Dr. Guilford speaks of the use of non-cohesive gold by driving one particle into another, and cutting through the surface and bringing into apposition the parts of the sheet which were not upon the surface. I think he intimates there that we have cohesion as the result. Now, of course, we are all aware that the manufacture of non-cohesive gold is a secret,—a secret that is very closely guarded, and one that I have often endeavored to find out. The Messrs. Abbey, or one of them, who manufactured the foil, told me some years ago that it was a quite common thing to find that their gold came out cohesive, and that after attempting to work it they found it so cohesive that they could do nothing with it, and they would put it back again into the pot. Those were days when cohesive gold was

not known in practice as a material for filling teeth. Now, if he told me truly, and I have every reason to believe he did, because he was a most sincere and conscientious man, it would show that the non-cohesive property was something not attributable to any condition of the surface of the gold, but to something in the gold itself. We know that non-cohesive gold is proven to be 998 and 999 fine, and yet it could not be made cohesive by any amount of heating, or any means that I have ever tried, and I have tried a great many ways; I could not get it so that it would be cohesive upon the surface or anywhere else. Furthermore, I would say that cohesion is not necessarily a property of pure gold only. Mr. Abbey gave me some gold which he told me was alloyed with silver; it had the appearance of gold foil that had been kept in a book for years, where the edges of the foil have been subject to atmospheric action. There was an appearance of darkening or discoloration, very similar to what we would have with cylinders, and which is probably due to sulphur in the air; and this foil, although it contains only about sixty per cent. of gold, about two-thirds gold and one-third silver, is as cohesive, I think, as any cohesive gold I ever had.

The advantages of cohesive and non-cohesive gold have been, I think, so fairly stated in the paper that it is unnecessary to reiterate point by point. I think that many operators of the present day are losing sight of one very important matter: which is, that in our operations we are performing them upon living subjects, and the more we can facilitate or hasten our operations the less strain we put upon our patients by long-continued operations. I think this should be very carefully considered. I know that a great many people for whom I have operated at different times have objected very seriously to long-continued and tedious operations, such as are necessary in making cohesive-gold fillings, and I am sure that in cavities with solid walls the wedging process, with non-cohesive gold, will shorten the time very materially indeed.

Dr. Edward C. Kirk. Mr. President, Dr. Stellwagen has brought out a very interesting feature of Dr. Guilford's paper: that is, the question of the impurities in gold foils as modifying their physical properties. He has stated that all the gold foils we use are nearly pure, but there is just that little qualification that makes the difference. I think I am safe in the statement that it is upon this small amount of impurity that the different working qualities of gold foil depend; and not only upon the amount of the impurity, but the nature of the impurity.

Dr. Stellwagen has told us that gold alloyed with silver is not markedly affected as to its cohesiveness. That statement is consistent with certain principles related to the combinations of metals known as alloys. Thus we find that when gold is alloyed with a metal that has no affinity for oxygen, the purity and integrity of its metallic surface is retained, and cohesion between such surfaces is possible. Whenever cohesion is lost, it is lost by virtue of some impurity on the metallic surface.

Some years ago, while preparing the metallurgical article in the "American System of Dentistry," I had occasion to investigate this question pretty thoroughly, and if you will bear with me a moment I will give you the record of the analyses that I had made of some of the gold foils in the market, also a record of some other analyses made by Dr. Stillman, of the Stevens Institute of Technology, New Jersey. There were some eight or ten assays made. Among these there were two samples of Abbey's non-cohesive gold assayed, which gave respectively in 1000 parts, 998.8 and 998.7; Wolrab's, 999.2 and 999.3; S. S. White Dental Manufacturing Company's Quarter Century, 999.1 and 999.1; Rowan's Decimal Foil, 999.9 and 999.8.

The assays made by Dr. Stillman, of the Stevens Institute of Technology, were: S. S. White Company, 999 fine. William Val-leau, New York, 998.7; traces of copper and aluminum. Ed. Rowan, New York, 999; traces of lead and silver. E. Kearsing, Brooklyn, 998.4; small amount of lead was found. R. S. Williams, New York, 999; traces of platinum found. Wolrab's, 999.8; no traces of any other metal present.

Now, that slight falling off from 1000 fine looks like a very little thing, but if the impurity represented by that small fraction were phosphorus or sulphur in steel, it would render the product absolutely worthless; it would modify the whole physical character of the metal.

The investigations made by Dr. Black, some years ago, show that the impurities from the atmosphere will modify the cohesiveness of gold foil, and that impurities which affect only the surface will destroy its cohesive quality as well as those fixed impurities which are part of the gold itself.

I think we lay too much stress on the question of the absolute purity of gold. One of the qualities of pure gold is a relatively great degree of softness, but we do not always want that. The very thing that makes Abbey's foil desirable is the small fraction of impurity it contains. I think it is undoubtedly a fixed impurity, because the samples I had assayed at the Philadelphia mint were all heated to a

bright redness before the assay was made. There was no other desire in making the assays but to decide the question of the constituents of the foils. The assays showed that Abbey's foil was the least pure ; but, on the other hand, it possesses its own peculiar properties that make it invaluable for certain uses as a filling-material.

There was another point in the paper that is worth while calling attention to. Dr. Guilford claims that it is immaterial whether you anneal your foil over an alcohol lamp or over a Bunsen burner. Now, the coal-gas supplied to us is always more or less impure, and more or less contaminated with sulphur. You have noticed that the metallic shields hung over gas-lamps become coated and discolored ; and a metal chimney will, in a short time, be corroded by the products of combustion of coal-gas. There is a marked affinity between sulphur and gold. Sulphur destroys the cohesiveness of gold and renders it brittle. I think the gold should not come in contact with the flame in annealing, if the highest degree of cohesiveness is desired. It should be annealed on mica. If you want semi-cohesiveness, you can warm it over an alcohol lamp. I must, therefore, take exception to the advice to use a Bunsen burner for annealing, and, for the reasons given, always employ an alcohol flame, which should preferably be burned from an asbestos wick.

On motion of Dr. Meeker, the subject was passed.

President Jack. The next subject in order will be the report of the clinics.

The chairman of the Clinic Committee not being present, Dr. Kratzer read the following

REPORT OF THE AFTERNOON CLINICS.

Dr. J. H. Downie, of Detroit, Michigan, showed his method of making a porcelain crown and inlay, which he calls a universal crown. A platinum band is fitted on the root, and an ordinary plate-tooth is used, a wire pivot being soldered between the two pins with pure gold solder. It is then set in plaster on the band, and backed up with wax. The whole piece is then removed, and the lower part of the band filled with a composition of two parts powdered silex and one part plaster. The wax is then boiled out, and it is backed up with porcelain body and baked. The porcelain is carried around so as to cover the band, which is not seen in the mouth. The crown is fused with cement to protect and strengthen the joint.

Dr. Charles P. Lenox, of Toronto, Canada, showed his method of obtunding sensitive dentine with hot nitrous-oxide gas.

Dr. A. R. Eaton, of Elizabeth, N. J., illustrated his method of obtunding sensitive dentine by means of hot air, using the Reichardt instrument.

Dr. F. T. Van Woert, of Brooklyn, N. Y., filled a second bicuspid, anterior approximal surface, with a combination of plastics; first lining the cavity with oxyphosphate, and then, while the oxyphosphate was still soft, working soft amalgam into it, mixing the two plastics together, then finishing in the usual way. This filling supports frail walls, remains in position, does not discolor the tooth, and makes a better filling than either material will make alone.

Dr. S. C. G. Watkins, of Montclair, N. J., exhibited his new sectional head-rest. It is made in such a way that it can be adapted to any head of whatever size, or any manner of dressing the hair. The two sections are opened so as to allow the knot on the back of a lady's head to pass down between the two sections. The head-rest can be placed in any desired position, giving freedom to the operator and comfort to the patient.

Dr. Harvey Iredell, of New Brunswick, N. J., filled a superior lateral incisor, labial surface, beginning with the Steurer gold, and finishing with R. S. Williams's semi-cohesive gold; cavity near the gum, and very sensitive; hot air for obtunding was applied by the Reichardt process. It is claimed by the manufacturer of the Steurer gold that it is without fibers, therefore will slide under the instrument, while gold that contains fibers will ball up. No retaining-points are made, —simply grooves or undercuts.

Dr. C. W. F. Holbrook, of Newark, N. J., inserted a seamless gold crown, a first bicuspid, in the short space of twelve minutes. The tooth had been broken off within twenty-four hours.

Dr. S. H. Guilford, of Philadelphia, prepared and filled a large compound cavity, mesial and masticating surfaces of a right superior first molar, using Williams's cylinders and Abbey's non-cohesive foil, rendered cohesive by extra annealing. The work was done with the Doriot engine and the Bonwill mallet. A Guilford band-matrix was used to simplify the operation and give shape to the filling.

Dr. J. W. Canady, of Albany, N. Y., filled the first right inferior bicuspid at the cervical portion with a combination of tin and gold, and finished with No. 30 rolled gold. He also exhibited several devices, among the most important of which was the use of a bar of block tin applied to the side of the tooth to be filled and opposite to the direc-

tion of the mallet blow. This furnished a resistance to the blow, the idea being to relieve the tooth from the shock of the impacting force. He successfully employed a vaporizer for obtunding sensitive dentine (vaporizer shown). In use, the metal ball is heated, and when so hot that the cylindrical chamber cannot be comfortably held in the fingers, one of the small cylinders filled with cotton which has been charged with the obtunding agent is slipped into place, the cap is placed on the end of the chamber, and the heat causes the medicament to be vaporized, the vapor passing through the fine tube outlet, which may be readily directed into the cavity. Chloroform was used in this instance very satisfactorily.

Dr. C. S. Beck, of Wilkes-Barre, Pa., filled a second left inferior bicuspid with The S. S. White Dental Mfg. Co.'s "Crystal Mat Gold."

Dr. W. H. Hertz, of Hazleton, Pa., demonstrated "immediate root-filling regardless of present condition." He first used peroxide of hydrogen, second, bichloride of mercury solution, lastly, oil of eucalyptus as a medium, with gutta-percha points as a filling.

Dr. W. A. Capon, of Philadelphia, demonstrated the use of Land's gas furnaces for making porcelain inlays, crowns, and bridge-work.

Dr. G. W. Warren, of Philadelphia, inserted a filling of Sibley's felt gold in the mesial, palatal, and distal surfaces of the first right superior bicuspid in seventeen minutes.

President Jack. The Committee on Dental Literature will now be heard from.

Dr. R. M. Sanger. Mr. President, the New Jersey State Society received a communication which was turned over to the Committee on Dental Literature, with the request that it be presented at this meeting. The New Jersey State Society have already taken action upon the matter, and we bring it up now in order that the Pennsylvania Society may consider it also. This was sent to us by the Connecticut Valley Dental Society :

"At the meeting of the New Jersey State Dental Society held at Newark, July 20, 1892, the following preamble and resolutions were unanimously adopted :

"WHEREAS, Advertisements, cards, and notices by dentists referring to teeth without plates, crown- and bridge-work, etc., frequently appear in the public prints ; and

"WHEREAS, Such advertisements, cards, and notices are misleading to the public, in that they claim or imply that these devices are new, and that in constructing these appliances they possess a superior skill over other practitioners ; and

"WHEREAS, These devices are not new, but have been constructed and applied for many years past by various members of the dental profession ; and

"WHEREAS, The code of ethics governing dental societies says 'it is unprofessional to resort to public advertisements, cards, hand-bills, posters, or signs calling attention to peculiar styles of work, lowness of prices, special modes of operating, or to claim superiority over neighboring practitioners,' and that 'dentists are frequently witnesses and at the same time the best judges of the impositions perpetrated by quacks, and it is their duty to enlighten and warn the public in regard to them ;' and

"WHEREAS, The objects of dental societies are to cultivate the science and art of dentistry and all its collateral branches, to elevate and sustain the professional character of dentists, and to promote among them mutual improvement ; therefore

"*Resolved*, For the information and protection of the public, this society condemns such advertisements, cards, and notices as not only unprofessional, but usually deceptive, either by statement or implication.

"GEO. A. MAXFIELD, D.D.S., *Secretary*."

Dr. Sanger. The New Jersey State Society have instructed me, as chairman of their Executive Committee, to have copies of this preamble and resolution printed, and, as far as possible, through the various members of the society, to have them distributed throughout the State. The object of this is clear to you. It is far-reaching. It is not so much an attack upon the men who are making these advertisements as it is an effort to enlighten the public as to the class of men who have recourse to these things in order to bring to themselves business. We are well aware of the fact that no honest practitioner can lay claim to special ability to do any class of work. The public do not know that, consequently they are misled and oftentimes abused ; and the New Jersey Society believe that a step of this kind would be far better than any legislation or any code of ethics, because when you educate the public up to a certain standpoint they are then able to protect themselves.

President Jack. The Committee on Dental Mechanical Appliances will now report.

The Secretary (Dr. Kratzer) read the report of the Committee on Dental Mechanical Appliances, as follows :

REPORT OF THE COMMITTEE ON MECHANICAL APPLIANCES.

MR. PRESIDENT AND GENTLEMEN :

The subject of "mechanical appliances" is so broad, that it must necessarily be curtailed, and your committee have decided to speak

only of such things as they have tested, not confining themselves to those which are entirely new, but of such as in their judgment may be of interest.

We would take this opportunity to speak a good word for "mechanical separators" in general, and the "Perry" in particular. In our hands they have proved a boon to our patients, and a source of satisfaction and convenience to ourselves.

The general opinion is that separators are harsh, but we are convinced that by their use teeth may be separated, filled, and returned to their normal position with much less pain than by other methods. Like any other appliance, they must be properly managed in order to obtain the best results. First, the separator must be adapted to the work to be accomplished. It must fit the teeth to be separated, so that the force may be applied in the proper direction. The points should extend high enough to be out of the way in finishing, but should never be allowed to impinge upon the gum to the extent of giving severe pain.

Having selected the separator best suited to the case, open until it will slip over the teeth with slight pressure. If you find that the points are likely to impinge upon the gum before the bows rest upon the teeth, warm two pieces of pink gutta-percha, the size of a filbert, put one under each bow, and gently press the separator up as high as necessary. The gutta-percha will be found a great convenience in nearly every case, as it prevents the separator from "rocking" during the operation.

When the gutta-percha has cooled, you may commence to get your space. (Here is the point at which the instrument has received its hard name, which should be applied instead to the operator, for with him rests almost entirely the amount of pain which the patient is required to suffer.) Apply the pressure equally on each side, and only as much as the patient can bear without much discomfort; this pain soon subsides. Repeat this operation at intervals while you are preparing your cavity. By the time you are ready to fill, you will find that you have all the space which you require. The teeth are held firmly, and are less susceptible to the jar from the mallet. The fillings can in most places be finished on their approximal surfaces before the separator is removed, and the soreness, which is never severe, passes away in a day or two. In case a tooth or teeth be missing next the one to be operated upon, it is well to fill the space with gutta-percha, in order to reduce the jar from the mallet.

We have found the separators very satisfactory with children, and

another important factor in their favor is that in their use there is no danger of destroying the pulps from strangulation. *Try them.* We feel confident that both you and your patients will be highly gratified.

During the past year there have been introduced several appliances for obtunding "sensitive dentine," using a blast of hot air for the purpose. The principle is the same in all except Small's obtunder, which uses a blast of hot vapor. The Reichardt instrument is intended to be used with a condenser, the air being put under a pressure of from sixty to one hundred and fifty pounds to the square inch. In the Richmond the pressure is obtained from a hand-bulb, and has an elastic reservoir in order to secure a uniform pressure. In the Lenox the pressure is obtained from a cylinder of nitrous-oxide gas. Medicaments, such as oil of cinnamon and carbolic acid, are placed in a reservoir within the instrument, and are vaporized by the air passing through. We have obtained as good results without as with the medicaments.

The pressure in Small's obtunder is secured by the rapid evaporation of alcohol or chloroform by heat.

In using the Reichardt connected with the condenser, the air is forced through the instrument so rapidly that it does not become sufficiently heated; using the same instrument in connection with the hand-bulb, it works satisfactorily. It is well made, and of a convenient form. The Richmond works equally well, but we do not consider it as convenient as the Reichardt. With the Lenox instrument we have had no experience. With the Reichardt and Richmond we may say we have had good results, reducing the sensitiveness in all cases, and in many obtunding it entirely. With Small's obtunder our experience has been limited and varied, some cases responding and others not. Here is a typical case. "Girl thirteen years of age, nervous temperament, lower right second molar with cavities in crown and buccal surfaces; used Small's obtunder in both cavities; relieved sensitiveness in crown cavity, but not in buccal. Second application of the hot vapor did not relieve the sensitiveness *entirely* in buccal cavity; used the hot-air obtunder; sensitiveness entirely destroyed."

We feel justified in saying that no dentist should be without one of these instruments. They are especially a great comfort while operating for children; they invariably ask for it after having it once used.

The disadvantages in using the instruments are: First, they can only be used where the rubber-dam can be applied; second, the pain, which is not necessarily severe if the blast be applied intermittingly,

thus gradually raising the temperature until the tooth can bear a continuous blast without pain ; third, of burning the gum, making an ugly sore.

We would call your attention to the Woodward and Hatch cervical clamps. They are both very serviceable instruments, and are similar in construction. The Hatch is the larger, and more liable to rock than the Woodward, which is supplied with a screw in front, which rests on the lower part of the tooth, thus reducing the rocking motion to the minimum.

What shall we say in regard to the "Flexo" file? At first it seemed as if they had come to supply a long-felt need, but they have not fulfilled our expectations. With an ordinary magnifying glass it may be seen that the trouble is with the cut ; in fact, they are not cut at all. The metal, instead of being cut, is beaten down, leaving rounded edges ; consequently, instead of cutting like a steel file, they simply rub down the gold. We know so little of the character of the metal that we cannot say whether this difficulty can be overcome or not.

We are aware that there are many other inventions which we might mention, but your committee decided to speak only of the appliances of which they had a definite knowledge, and it is not possible for any committee to test all the inventions which are given to the profession.

In this connection we would make the suggestion that parties making tests of appliances should send the results to this committee, thus enabling them to make an extended and reliable report.

It is, in our opinion, the duty, and should be the pleasure, of every practitioner to avail himself of the assistance which inventive genius is rendering, to facilitate operations at the chair and in the laboratory.

GEORGE EMERY ADAMS,	}	<i>Committee for New Jersey.</i>
ALVIN R. EATON,		
F. C. BARLOW,		

JOSEPH HEAD,	}	<i>Committee for Pennsylvania.</i>
E. P. KREMER,		
S. H. GUILFORD,		

Dr. Kirk made an announcement in relation to the excursion on Saturday over the Pennsylvania Railroad to Altoona, and over the Bell's Gap Railroad.

Dr. Sanger. Mr. President, I move that the Secretaries of the two societies be instructed to draw up a formal letter of thanks to the

Pennsylvania Railroad Company for their courtesy to the societies, to be placed in the hands of Dr. Kirk for transmission.

Dr. Sanger's motion was adopted.

On motion of Dr. Sanger, a vote of thanks was extended to the manager of the Mountain House for his kindness in furnishing meeting and clinic rooms, etc.

President Jack. Has the chairman of the Committee on Materia Medica any report to make?

Dr. Meeker. The chairman of the Committee on Materia Medica is not present ; I move that we pass it.

President Jack. The next proceeding is the report of the Committee on Prosthetic Dentistry.

Dr. Meeker. I move that we pass it, if they are not present.

Dr. Meeker's motion prevailed.

A report of the Board of Censors of the Pennsylvania Society was read, and on motion adopted.

President Luckey. I will appoint Dr. Sanger and Dr. Curtis a committee to conduct the President-elect of the New Jersey Society to the chair.

The President-elect, Dr. Adelberg, being conducted to the chair, Dr. Luckey said, "Dr. Adelberg, in resigning the President's chair of the New Jersey Society to you, and turning over to you that gavel, which is the insignia of your official position, I do it with the feeling that it will be wielded by you with impartiality and with a continual sense of the responsibility resting upon your shoulders, and at the same time that you will bear in mind the welfare and interests of the society which you represent."

Dr. Adelberg. Gentlemen of the New Jersey Dental Society, I thank you very much for the honor you have conferred upon me, and I beg to assure you that it shall be my ambition to further the interests of the society as well, if I can, as my honorable predecessor has done. To the President and members of the Pennsylvania Society I wish to express my heartfelt thanks for the kind manner in which they have received us and treated us while here ; and on behalf of the New Jersey Society I extend to them a cordial invitation to attend our future meetings, to be held as usual at Asbury Park. We will always make them welcome,—our latch-string always hangs on the outside ; and especially next year, when there are so many attractions elsewhere, including the Congress at Chicago, I hope they will not forget to give us a call, but stop on the way, and we will try to make it pleasant for them.

The Vice-President-elect, Dr. Beesley, not being present, Dr. Meeker moved that he be considered installed in office.

President Jack. I will appoint as a committee for the purpose of conducting the newly elected officers of the Pennsylvania Society to the chair, Dr. Filbert and Dr. Beale.

The President-elect of the Pennsylvania Society, Dr. Van Orsdel, being conducted to the chair, was addressed by President Jack as follows: "Dr. Van Orsdel, I have the honor to introduce you to the Pennsylvania State Society as their President, and I feel sure that you will do honor to the office."

President Van Orsdel. Gentlemen of the Pennsylvania Society, I assure you that the honor which you have conferred upon me is highly appreciated, and it shall be my endeavor to serve you to the best of my limited ability. I cannot hope, with my inexperience, to serve you as well as you have been served during the past, but I beg you to be lenient with me in my shortcomings, because if I do make errors they will be errors of the head and not of the heart.

Gentlemen, I have the honor to present to you Dr. Frank L. Bassett, your Vice-President-elect.

Dr. Bassett. Mr. Chairman, it is scarcely necessary for me to say anything on this occasion, I presume, as the office of Vice-President is a subordinate position. I can only echo what has been said before, that anything I can do to further the interests of the society I shall do very cheerfully, and I thank you for your kindness in honoring me with the position.

President Adelberg. Gentlemen, I shall appoint for the New Jersey Society, as a Clinical Conference Committee, Dr. R. M. Sanger, of Orange; Dr. B. F. Luckey, of Paterson; Dr. Fred. C. Barlow, of Jersey City; and Dr. Charles A. Meeker, of Newark.

President Van Orsdel announced the standing committees of the Pennsylvania Society for the year.

A vote of thanks was extended to The S. S. White Dental Manufacturing Co. for their kindness to the convention in loaning chairs and other appliances for use in clinics.

Dr. Boice. Mr. President of the Pennsylvania Society, it has been customary to have the books of the Treasurer audited by the Executive Committee. I think they are ready to report, and as the accounts go into new hands it will be quite advisable to have that done.

Dr. Bassett. As chairman of the committee, I would report that the books of the Treasurer came only lately by express, and not having the presence of the Treasurer to explain some matters we were

not able to thoroughly understand everything ; but it seems to be sufficiently clear that the balance on hand amounts to \$86 and some cents, and I presume the amount will be turned over to the new Treasurer by the old Treasurer. Vouchers accompany the books, and a list of members who are in arrears, which will also be turned over to the new Treasurer.

I would like, while I am on my feet, to offer a motion that authority be given to the Executive Committee to settle all bills due on account of this joint meeting, so that orders may not have to be drawn or voted upon separately.

Dr. Bassett's motion was carried.

Adjourned.

C. V. KRATZER, *Secretary for Pennsylvania.*

CHAS. A. MEEKER, *Secretary for New Jersey.*

INDEX.

TRANSACTIONS OF THE PENNSYLVANIA STATE DENTAL SOCIETY.

	PAGE
Bills approved	17
Census classification of dentists, report on	7
Charter to be secured	13
Constitutional amendments acted on	15
" " submitted	13
Members, election of	7
" present at meeting	5
Officers and committees, election and appointment of	17
Recording Secretary's salary increased	17
Report, Board of Censors	6
" Committee on Legislative Action	14
" Committee on Enforcement of Dental Law	12, 16
" Corresponding Secretary	11
" Executive Committee	10
" Publication Committee	13
" Recording Secretary	8
" State Board of Dental Examiners	11
Scholarship certificate refused	15

MINUTES OF JOINT SESSIONS.

Address, President Louis Jack	21
" President B. F. Luckey	30
Clinical Conference Committee, report of	81
Clinics, report of	120
Dental Protective Association, communication from	80
Discussion, "Anti-Conservative Treatment of the Exposed Dental Pulp"	93
" "The Cohesive Property of Gold: Its Character, Value, and Availability"	112
" "Dental Law and Dental Education"	54, 68
" Presidents' Addresses	35

	PAGE
Essay, "Anti-Conservative Treatment of the Exposed Dental Pulp,"	
Charles Harker	82
" "The Cohesive Property of Gold: Its Character, Value, and	
Availability," S. H. Guilford	102
" "Dental Education," G. Carleton Brown	48
" "Dental Law and Dental Education," W. E. Magill	62
Officers, installation of	127, 128
Report of Committee on Dental Literature	122
" "Mechanical Appliances	123
Resolutions of thanks	127, 128





NATIONAL LIBRARY OF MEDICINE



NLM 05229354 4